SANYO

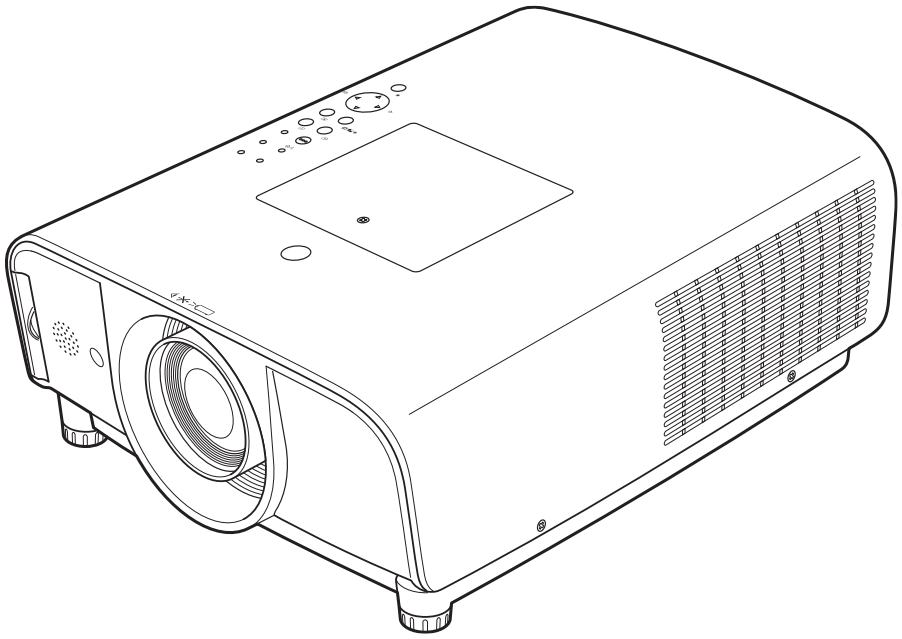
FILE NO.

SERVICE MANUAL

Multimedia Projector

Model No. PLC-XT35
PLC-XT35L
U.S.A, Canada,
Europe, U.K, Asia

Original Version



** PLC-XT35L--- without Projeccton Lens.*

Match the Chassis No. on the unit's back cover with the Chassis No. in the Service Manual.
If the Original Version Service Manual Chassis No. does not match the unit's, additional Service Literature is required. You must refer to "Notices" to the Original Service Manual prior to servicing the unit.

→

Chassis No. KP3-XT3500
KP3-XT35L00

PRODUCT CODE

PLC-XT35	PLC-XT35L
1 122 404 00	1 122 404 20
1 122 405 00	1 122 405 20
1 122 405 02	1 122 405 22

REFERENCE NO. SM5110907-00

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Safety Instructions

Safety Precautions

WARNING:
The chassis of this projector is isolated (COLD) from AC line by using the converter transformer. Primary side of the converter and lamp power supply unit circuit is connected to the AC line and it is hot, which hot circuit is identified with the line (⎓) in the schematic diagram. For continued product safety and protection of personnel injury, servicing should be made with qualified personnel.

The following precautions must be observed.

1: An isolation transformer should be connected in the power line between the projector and the AC line before any service is performed on the projector.

2: Comply with all caution and safety-related notes provided on the cabinet back, cabinet bottom, inside the cabinet or on the chassis.

3: When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as, control knobs, adjustment covers or shields, barriers, etc.

DO NOT OPERATE THIS PROJECTOR WITHOUT THE PROTECTIVE SHIELD IN POSITION AND PR OPERLY SECURED.

4: Before replacing the cabinet cover, thoroughly inspect the inside of the cabinet to see that no stray parts or tools have been left inside.

Before returning any projector to the customer, the service personnel must be sure it is completely safe to operate without danger of electric shock.

Product Safety Notice

Product safety should be considered when a component replacement is made in any area of the projector. Components indicated by mark ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. It is, therefore, particularly recommended that the replacement of there parts must be made by exactly the same parts.

Service Personnel Warning

Eye damage may result from directly viewing the light produced by the Lamp used in this equipment. Always turn off Lamp before opening cover. The Ultraviolet radiation eye protection required during this servicing.
Never turn the power on without the lamp to avoid electric-shock or damage of the devices since the stabilizer generates high voltages (15kV - 25kV) at its starts.
Since the lamp is very high temperature during units operation replacement of the lamp should be done at least 45 minutes after the power has been turned off, to allow the lamp cool-off.

DO NOT ATTEMPT TO SERVICING THE REMOTE CONTROL UNIT.

Laser Beam may be leaked out when in disassemble the Unit. As the Laser Beam used in this Remote control unit is harmful to the eyes.
If the remote control unit is failed, replace with new one.

Specifications

Mechanical Information

Projector Type	Multi-media Projector
Dimensions (W x H x D)	13.7" x 6.46" x.17.48" (348.1 mm x 164 mm x 444 mm) (Not including adjustable feet)
Net Weight	17.86 lbs (8.1 kg)
Feet Adjustment	0˚ to 5.0˚

Panel Resolution

LCD Panel System	1.0" TFT Active Matrix type, 3 panels
Panel Resolution	1,024 x 768 dots
Number of Pixels	2,359,296 (1,024 x 768 x 3 panels)

Signal Compatibility

Color System	PAL, SECAM, NTSC, NTSC4.43, PAL-M, and PAL-N
High Definition TV Signal	480i, 480p, 575i, 575p, 720p, 1035i, and 1080i
Scanning Frequency	H-sync. 15 kHz–100 kHz, V-sync. 50 Hz–100 Hz

Optical Information

Projection Image Size (Diagonal)	Adjustable from 30" to 300" (PLC-XT35)
Throw Distance	3.9'–32.8' (1.2 m–10.0 m) (PLC-XT35)
Projection Lens	F=1.7 to 2.1, f=33 to 43 mm with motor zoom and focus (PLC-XT35)
Projection Lamp	330 W

Interface

Input 1	Digital (DVI-D) x 1, Analog (Mini D-sub 15 pin) x 1
Input 2	BNC Type x 5 (G or Video/Y, B or Cb-Pb, R or Cr-Pr, HV and V)
Input 3	RCA Type x 1, Mini DIN 4 pin x 1
AUDIO IN	Audio 1 (Mini Type stereo), Audio 2 (Mini Type stereo), Audio 3 (RCA Type) x 2
Analog Out	Mini D-sub 15 pin x 1
Audio Out	Audio (Mini Type stereo) x 1
R/C Jack	Mini Type (Wired Remote) x 1
Control Port	Mini DIN 8 pin x 1
USB Connector	USB Series B x 1
Option	PJ-Net Organizer Terminal x 1

Audio

Internal Audio Amp	1.0 W RMS
Built-in Speaker	1 speaker, ø1.1" (28 mm)

Power

Voltage and Power Consumption	AC 100–120 V (4.6A Max. Ampere), 50/60 Hz (The U.S.A and Canada) AC 200–240 V (2.3A Max. Ampere), 50/60 Hz (Continental Europe and The U.K.)

Operating Environment

Operating Temperature	41˚F–95˚F (5˚C–35˚C)
Storage Temperature	14˚F–140˚F (-10˚C–60˚C)

Remote Control

Battery	AAA or LR03 Type x 2
Operating Range	16.4' (5 m/±30˚)
Dimensions	1.8" (W) x 1.0" (H) x 5.7" (D) (45 mm x 25 mm x 145 mm)
Net Weight	3.5 oz (99 g) (including batteries)
Laser Pointer	Class II Laser (Max. Output: 1 m W/Wave length: 640–660 nm)

c UL US LISTED

This symbol on the nameplate means the product is Listed by Underwriters Laboratories Inc. It is designed and manufactured to meet rigid U.L. safety standards against risk of fire, casualty and electrical hazards.

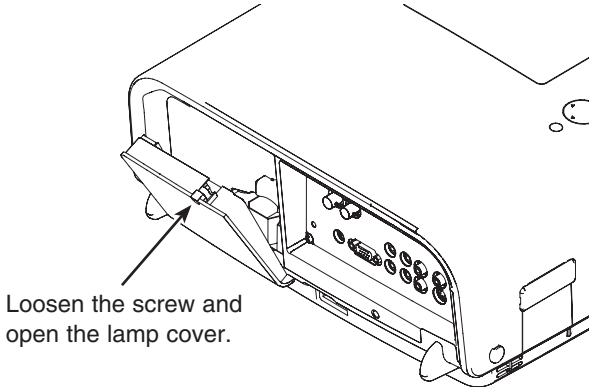
Circuit Protections

This projector provides the following circuit protections to operate in safety. If the abnormality occurs inside the projector, it will automatically turn off by operating one of the following protection circuits.

Fuse

A fuse is located inside of the projector. When the POWER indicator is not lightning, the fuse may be opened. Check the fuse as following steps.
The fuse should be used with the following type;

Fuse Part No. : 323 027 2605
TYPE T10.0AH 250V FUSE
215010. LITTEL

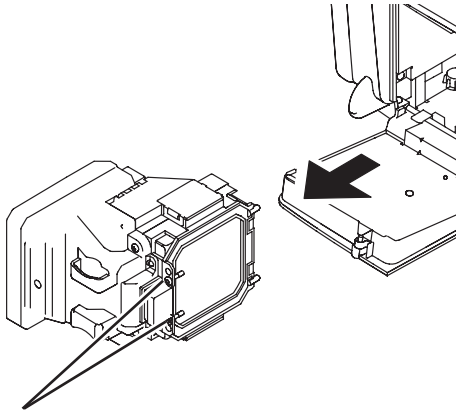


Loosen the screw and open the lamp cover.

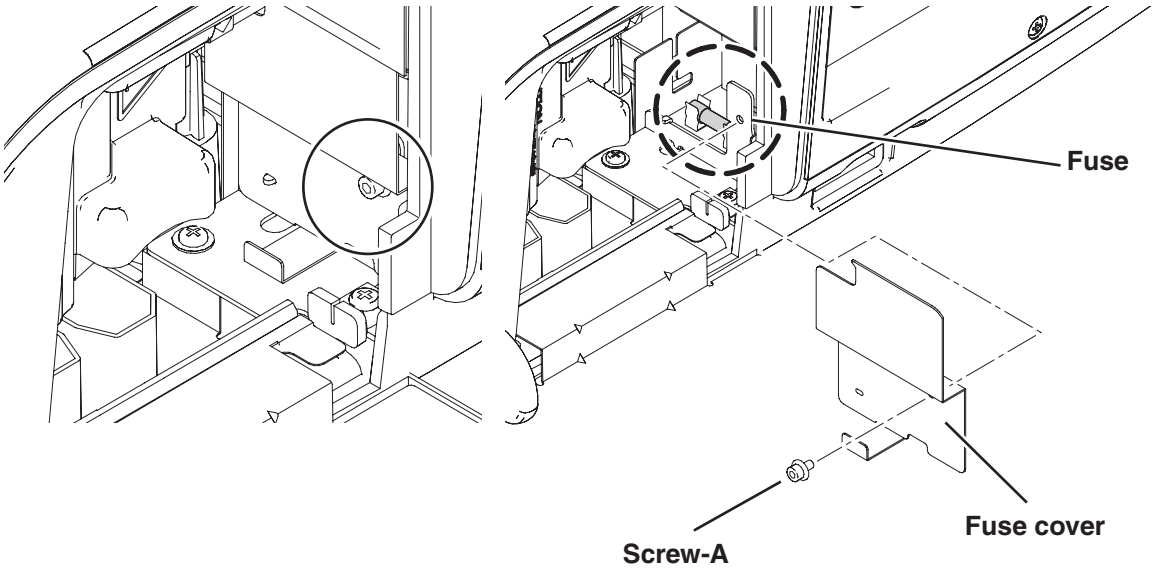
How to replace the fuse

1. Loosen the screw of the lamp cover and open the lamp cover.
2. Loosen 2 screws of lamp ass'y and pull out the lamp ass'y.
3. Remove the screw-A and remove the fuse cover following to "Mechanical Disassemblies".
4. Remove the fuse from fuse holder on the Power(Filter) board .

To install the fuse, take reversed step in the above.

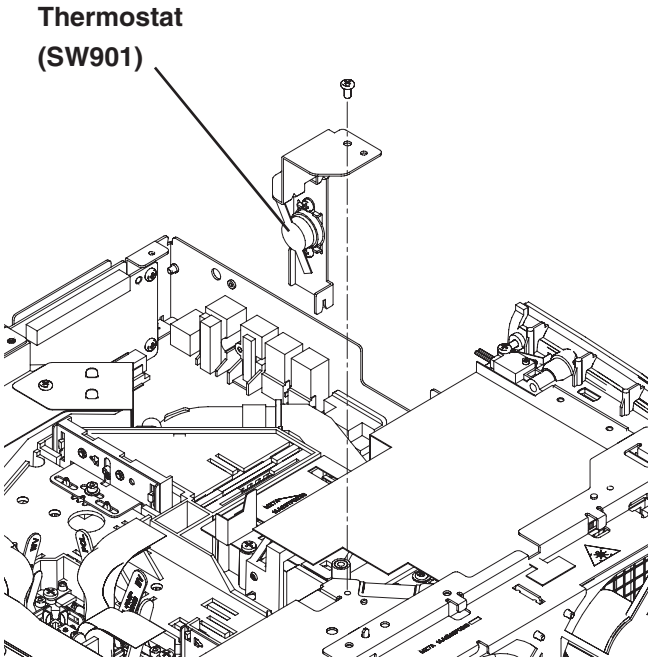


Loosen the 2 screws and pull out the lamp ass'y.



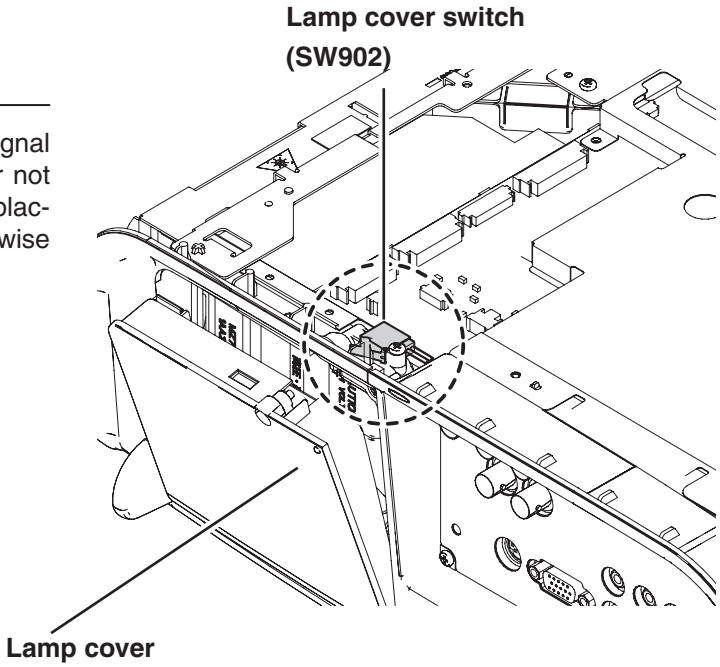
Thermostat (SW901)

There is the thermostat (SW901) inside of the projector to detect the internal temperature rising abnormally. When the internal temperature reaches near 100˚C, the thermostat opens to stop the operation of the power supply circuit.
The thermostat will automatically return to normal condition when the internal temperature becomes normal (about 60˚C).



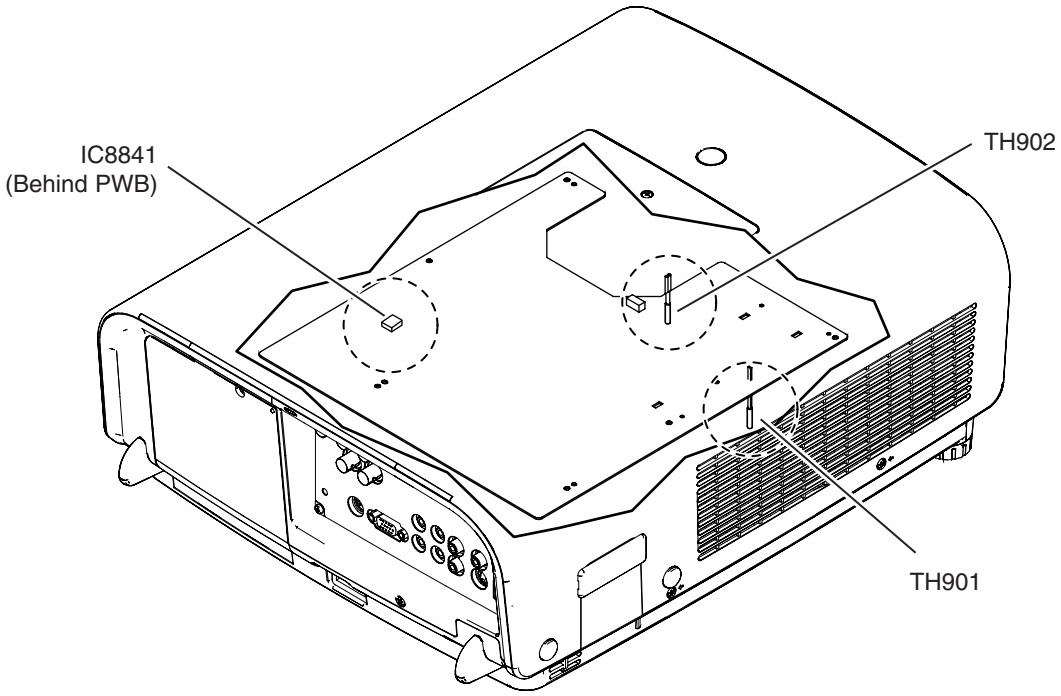
Lamp cover switch (SW902)

The lamp cover switch (SW902) cuts off the drive signal to the lamp circuit when the lamp cover is removed or not closed completely. After opening the lamp cover for replacing the lamp ass'y, place the lamp cover correctly otherwise the projector can not turn on.



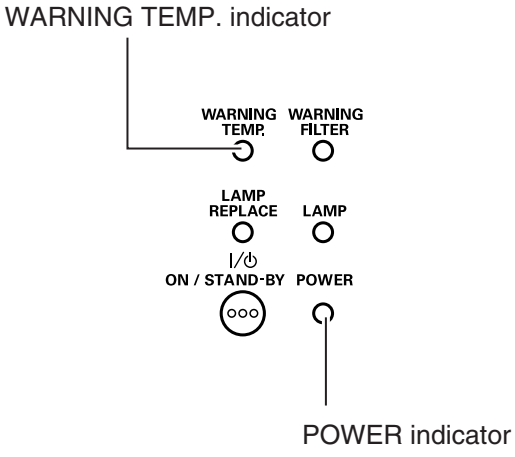
Temperature sensors (TH901, TH902, IC8841)

The projector provides a temperature sensor IC on the Main board and 2 thermistors. The temperature sensor IC monitors around the lamp house, the thermistors are placed on the blue panel holder and on the intake duct.
- Internal temperature sensor A (IC8841) (around the lamp house)
- Panel sensor B (TH902) (around the blue panel)
- Room temperature sensor C (TH901) (around the intake duct)



The projector is shut down and the WARNING TEMP. indicator is blinking red.

When the temperature inside the projector reaches a certain level, the WARNING TEMP. indicator is blinking slowly. When the inside temperature becomes high, the projector will be automatically shut down to protect the inside of the projector. The WARNING TEMP. indicator is blinking faster and the POWER indicator is blinking. The POWER indicator is blinking while the projector is being cooled down. When the projector has cooled down enough (to its normal operating temperature), it can be turned on again by pressing the ON/STAND-BY button.



✔***Note:***
- The WARNING TEMP. indicator continues to blink even after the temperature inside the projector returns to normal. When the projector is turned on again, the WARNING TEMP. indicator stops blinking.

Power failure and fan lock detection

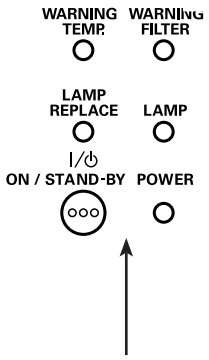
The projector provides the detection circuits of the power failure and the fan lock. When the detection circuit detects an error at the power supply line or at the fan operation circuit, the projector will turn into the standby mode to protect the other circuits defective.

The projector is shut down and all five indicators are blinking.

When the projector detects an abnormal condition, it will be automatically shut down to protect the inside of the projector and all five indicators on the top panel blink. In this case, unplug the AC power cord and plug it, and then turn on the projector once again to verify operation. If the projector cannot be turned on and these indicators are still blinking, unplug the AC power cord.

CAUTION
DO NOT LEAVE THE PROJECTOR WITH THE AC POWER CORD CONNECTED UNDER AN ABNORMAL CONDITION. IT MAY RESULT IN FIRE OR ELECTRIC SHOCK.

Top Control



All five indicators are blinking

Maintenance

Cleaning the Air Filter

Filter prevents dust from accumulating on the optical elements inside the projector. Should the filter becomes clogged with dust particles, it will reduce cooling fans' effectiveness and may result in internal heat buildup and adversely affect the life of the projector. If a "Filter warning" icon (yellow or red) appears on the screen and the WARNING FILTER indicator lights or blinks, clean the filter immediately. Clean the filter by following the steps below.

1 Turn off the projector, and unplug the AC power cord from the AC outlet.

2 First, clean up the dust on the projector and around the air vents.

3 Pull out the filter cover from the projector and then remove the filter.

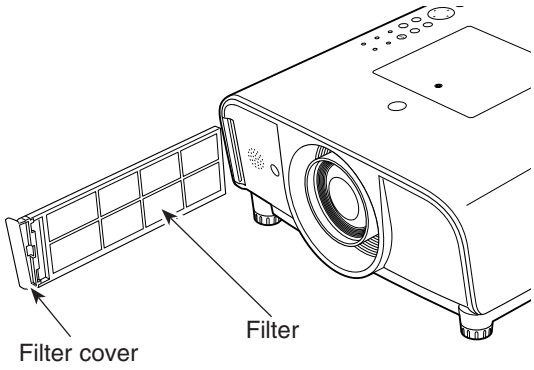
4 Gently clean the filter by using a brush or blower.

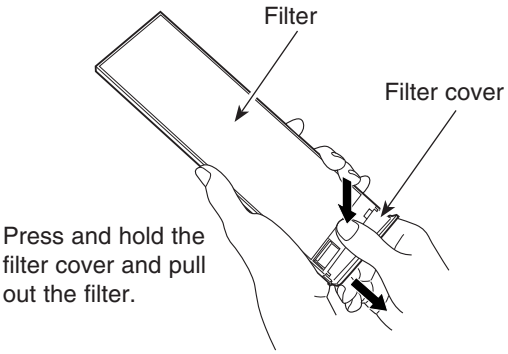
WARNING: Do not wash the filter with water and any other liquid matter. Otherwise the filter may be damaged.

5 Reinstall the filter into the projector properly.

6 Reset the filter counter in the Setting Menu. See "Resetting the Filter Counter" below.

CAUTION
Do not operate the projector with the filter removed. Dust may accumulate on the optical elements degrading picture quality.
Do not put anything into the air vents. Doing so may result in malfunction of the projector.





NOTE: If the filter is heavily clogged and unable to clean, replace it with a new one. Consult your dealer for details.

Replacement Filter Part No.: 910 330 7184

Resetting the Filter Counter

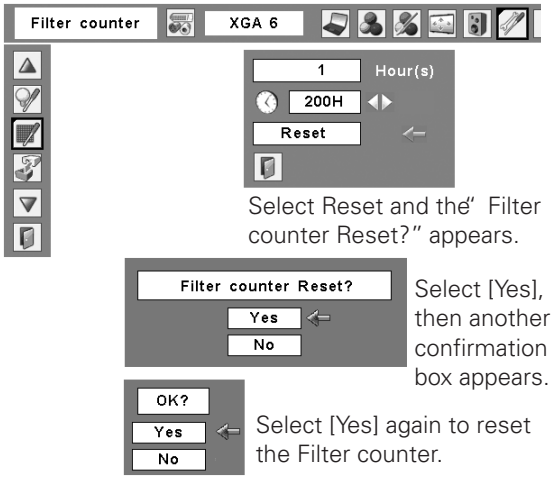
Be sure to reset the Filter counter after cleaning or replacing the filter.

1 Press the MENU button to display the On-Screen Menu. Use the Point ◀ ▶ buttons to move the red framed pointer to the Setting Menu icon.

2 Use the Point ▲▼ buttons to move the red framed pointer to Filter counter and then press the SELECT button. A dialog box appears showing the total accumulated time of the filter use, a timer setting option, and the reset option. Select Reset and the "Filter counter Reset?" appears. Select [Yes] to continue.

3 Another confirmation dialog box appears, select [Yes] to reset the Filter counter.

Filter counter

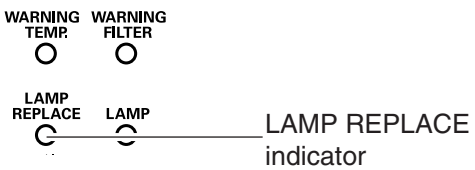


Lamp Replacement

When the projection lamp of the projector reaches its end of life, the Lamp replacement icon appears on the screen and LAMP REPLACE indicator lights yellow. Replace the lamp with a new one promptly. The timing when the LAMP REPLACE indicator should light is depending on the lamp mode.

WARNING:
TURN OFF THE UV LAMP BEFORE OPENING THE LAMP COVER

Top Control



Lamp replacement icon

CAUTION

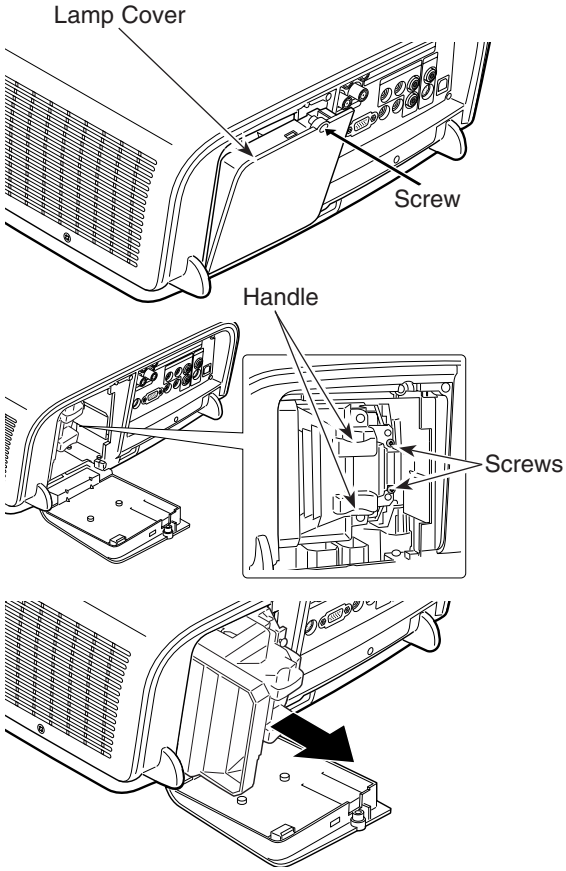
Allow a projector to cool for at least 45 minutes before you open the Lamp cover. The inside of the projector can become very hot.

CAUTION

For continued safety, replace with a lamp of the same type lamp. Do not drop the lamp or touch the glass bulb! The glass can shatter and may cause injury.

Follow these steps to replace the lamp.

1. Turn off the projector and unplug the AC power cord. Let the projector cool for at least 45 minutes.
2. Remove the screw that secures the lamp cover, and then open the lamp cover.
3. Remove the two (2) screws that secure the lamp. Lift the lamp out of the projector by using the handle.
4. Replace the lamp with a new one and secure the two (2) screws. Make sure that the lamp is set properly. Put the lamp cover back and secure it with the screw.
5. Connect the AC power cord to the projector and turn on the projector.
6. Reset the lamp counter.
See “Resetting the Lamp Counter” on the next page.



ORDER REPLACEMENT LAMP

Type No.	**POA-LMP116**
Service Parts No.	**610 335 8093**

Resetting the Lamp Counter

Be sure to reset the Lamp counter after the lamp is replaced. When the Lamp counter is reset, the LAMP REPLACE indicator stops lighting and the Lamp replacement icon disappears.

1 Press the MENU button to display the On-Screen Menu. Use the Point ◀ ▶ buttons to move the red framed pointer to the Setting Menu icon.

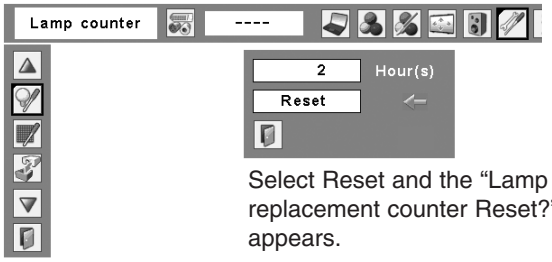
2 Use the Point ▲▼ buttons to move the red framed pointer to Lamp counter and then press the SELECT button. A dialog box appears showing the total accumulated time of the lamp usage and the reset option. Select Reset and the "Lamp replacement counter Reset?" appears. Select [Yes] to continue.

3 Another confirmation dialog box appears, select [Yes] to reset the Lamp counter.

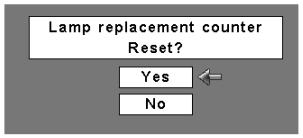
✔***Note:***

- Do not reset the Lamp counter without implementing lamp replacement. Be sure to reset the Lamp counter only after replacing the lamp.

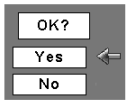
Lamp counter



Select Reset and the "Lamp replacement counter Reset?" appears.



Select [Yes], then another confirmation box appears.



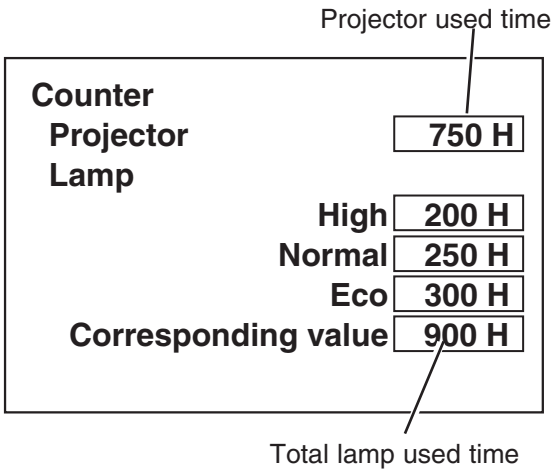
Select [Yes] again to reset the Lamp counter.

How to check Lamp Used Time

The LAMP REPLACE indicator will light yellow when the total lamp used time (Corresponding value) reaches 3,000 hours. This is to indicate that lamp replacement is required.
The total lamp used time is calculated by using the below expression,
Total lamp used time (Corresponding value) = **T***eco* + (**T***normal* x 1.2) + (**T***high* x 1.5)

T*eco*: used time in the Eco mode
T*normal* : used time in the Normal mode
T*high* : used time in the High mode

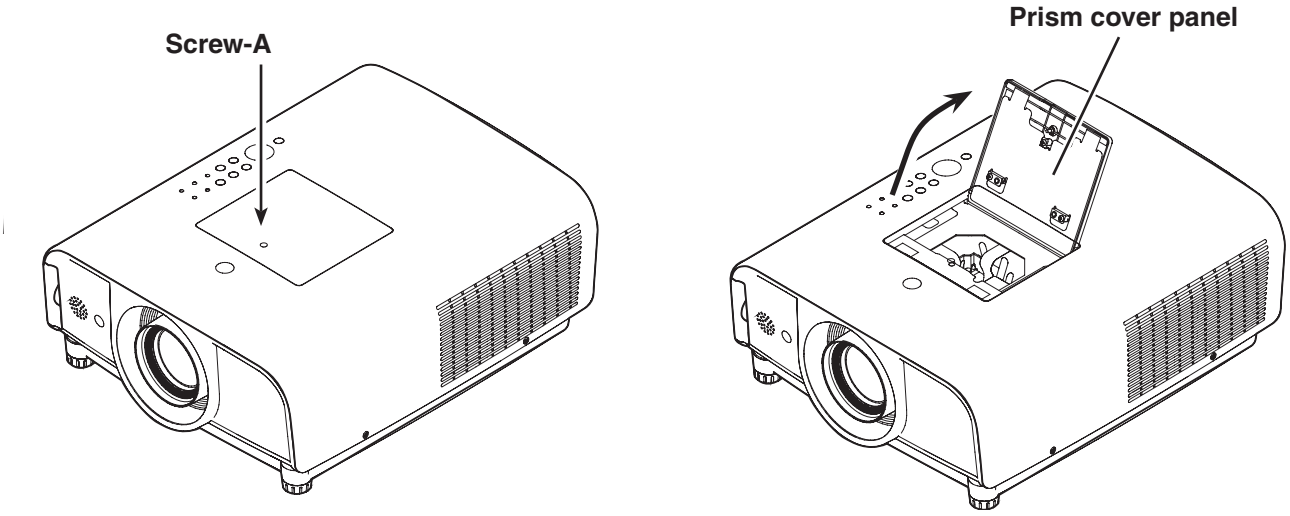
You can check the lamp used time following to the below procedure.
1 Press and hold the **ON/STAND-BY** button on the projector for more than 20 seconds.
2 The projector used time and lamp used time will be displayed on the screen briefly as follows.

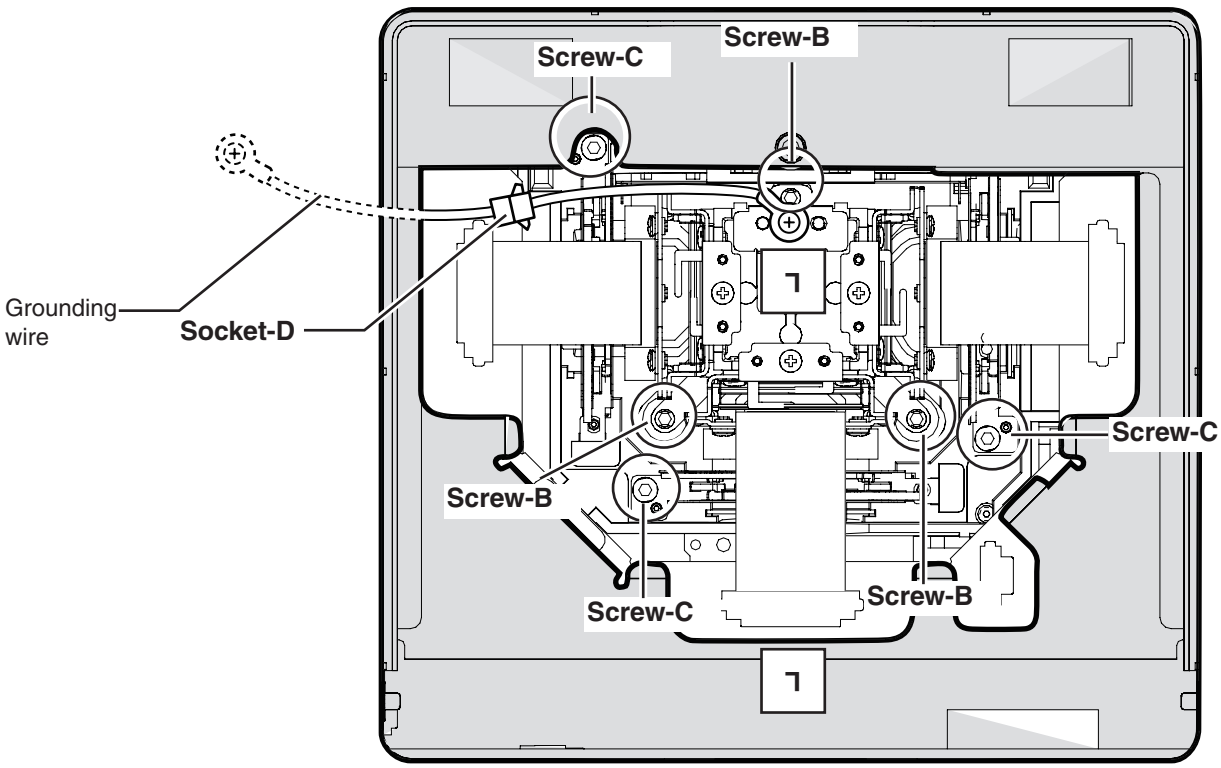


Quick maintenance

This projector provides a prism cover on the cabinet top to enhance the service maintenance. This enables service personnel to align the optical adjustment or replace the optical parts without disassembly the cabinet top.

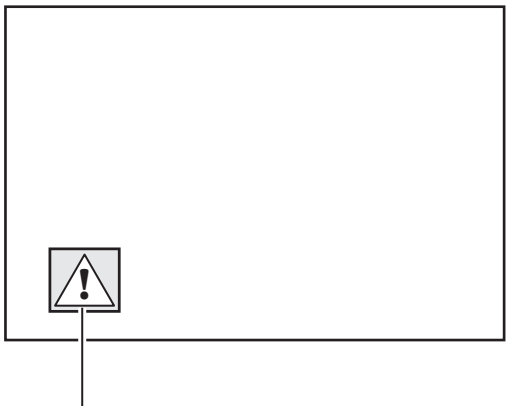
1. Loosen 1 screw-A and open the prism cover panel.
2. To remove the LCD Panel/Prism ass'y, loosen 3 screws-B and disonnect a socket-D, and then pull the LCD Panel/ Prism ass'y up.
3. To remove the Optical filter ass'y, remove a screw-C on each stopper of the Optical filter ass'y and then pull the Optical filter ass'y up.





Prohibition of motor control

This projector provides a function to prohibit the operation of motors. After installing the projector and then setting up this function. You can protect the unexpected operation by the users. All the motor controls, Focus, Zoom and Lens-shift, will not be operated. The prohibition icon will appear on the screen when user presses any of the motor control buttons.



Setting up procedures

1. Enter the service mode.
2. Select Group no. "200" and Item no. "55". Change Data value from "0" (Not prohibited) to "1" (Prohibited). Now the motor control is prohibited.
3. Exit from the service mode.

To cancel the prohibition mode, set value to "0" in the step 2.

* How to enter the service mode and select the group, item and data value, see "Service Adjustment Menu Operation".

Security Function Notice

This projector provides security functions such as "Key lock", "PIN code lock" and "Logo PIN code lock". When the projector has set these security function on, you are required to enter correct PIN code to use the projector. If you do not know the correct PIN code to the projector, the projector can no longer be operated or started. In this case, you must reset those function first according to the resetting procedure described below and then check up on the projector.

Function	Description
Key lock	Locks operation of the top control or the remote control. If the Key lock is enabled with top control lock, the projector can no longer be started. *Initial setting: Key lock function is disabled*
PIN code lock	Prevents the projector from being operated by an unauthorized person. *Initial code: "1234"*
Logo PIN code lock	Prevents an unauthorized person for changing the start-up logo on the screen. *Initial code: "4321"*

Resetting procedure

1 Disconnect the AC power cord from the AC outlet.

2 As pressing the **SELECT** button on the projector, connect the AC power cord into an AC outlet again. Keep pressing the **SELECT** button until the POWER indicator lights continuously.

This is complete the resetting of the security function. The PIN code lock and Logo PIN code lock are reset as the initial PIN code at the factory and the Key lock function is disabled.

Please refer to the owner's manual for further information of the security functions.

Mechanical Disassembly

Mechanical disassembly should be made following procedures in numerical order.
Following steps show the basic procedures, therefore unnecessary step may be ignored.
Caution:
The parts and screws should be placed exactly the same position as the original otherwise it may cause loss of performance and product safety.
The wiring method of the leads and ferrite cores should be returned exactly the same state as the original, otherwise it may cause lose of performance and product safety.

Screws Expression (Type Diameter x Length) mm	
T type	M Type

1-1 Cabinet top ass'y removal-1.

1. Remove 1 cover-A and 2 covers-B.

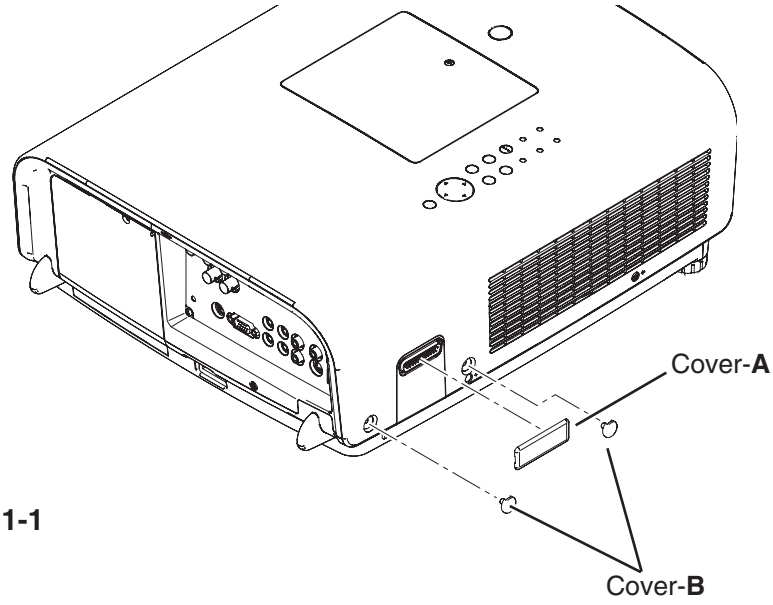


Fig. 1-1

1-2 Cabinet top ass'y removal-2.

1. Loosen 1 screw-A(M3X11) and open the Lamp cover.
2.Remove 1 screw-B(M3X8).

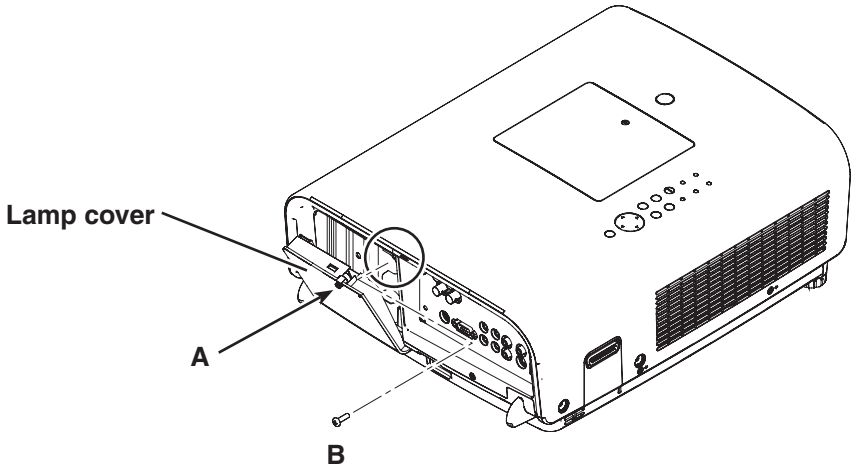


Fig. 1-2

1-3 Cabinet top ass'y removal-3.

1. Remove 6 screws-A(M3X8) and remove the Cabinet top ass'y.

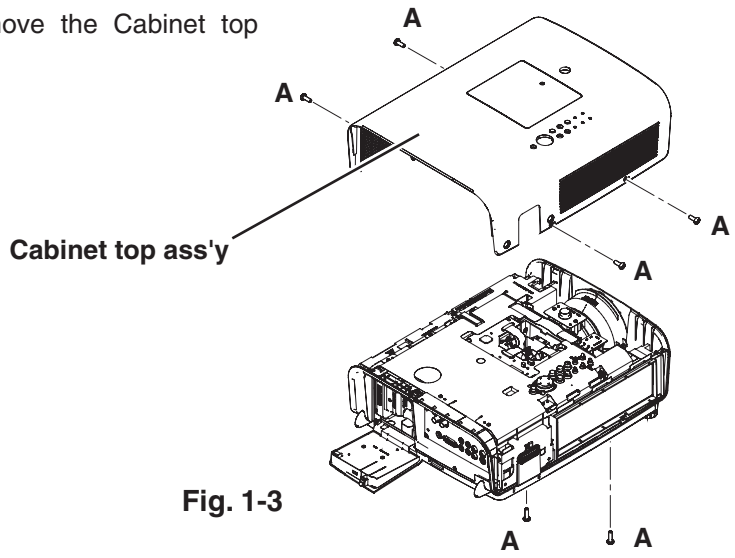


Fig. 1-3

1-4 Cabinet top ass'y removal-4.

1. Loosen screw-A(M3X11) and open the Prism cover panel.
   (Press 2 places (unhook) and remove the Prism cover panel upward.)
2. Remove 3 screws-B(T3X8) and remove the shield plate.

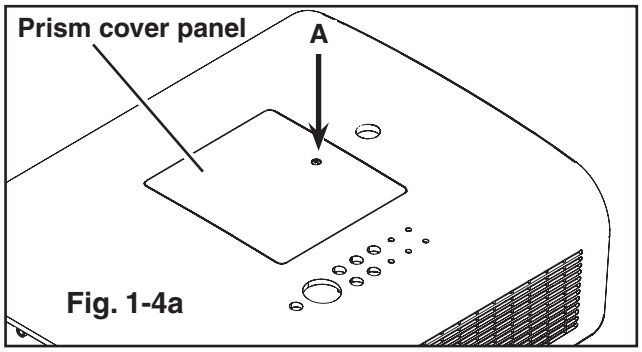


Fig. 1-4a

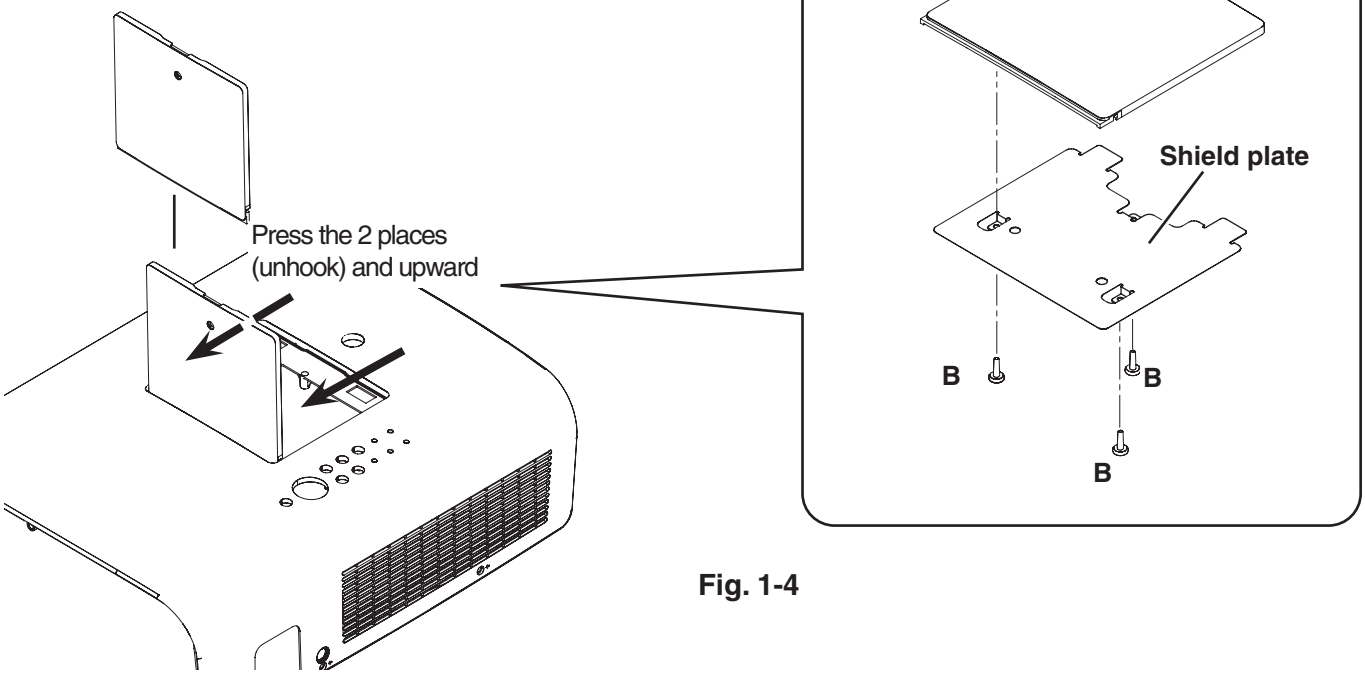


Fig. 1-4

2 AV Panel and Side Panel removal.

1. Remove 5 screws-A(M3X8) and remove the AV Panel.
2. Remove 1 screw-B(M3X6) and remove the Side Panel.

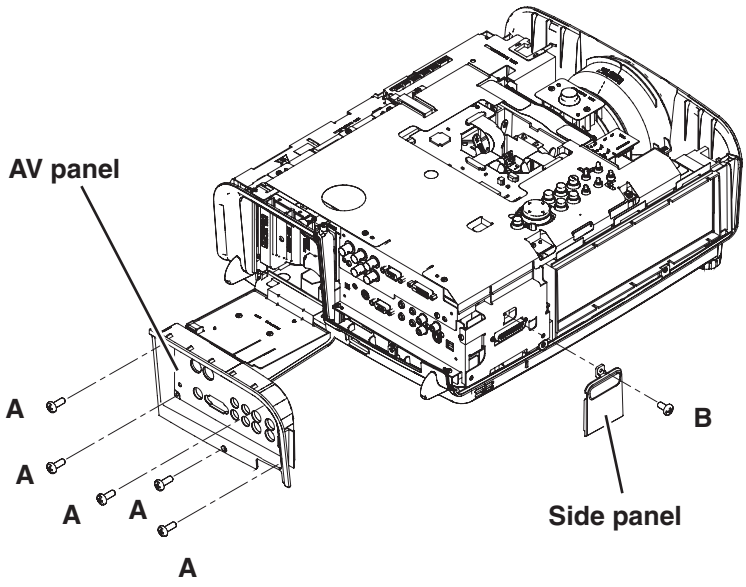


Fig. 2

3 Shield plate top-A removal.

1. Remove 11 screws-A(M3X6) and remove the Shield plate top-A.

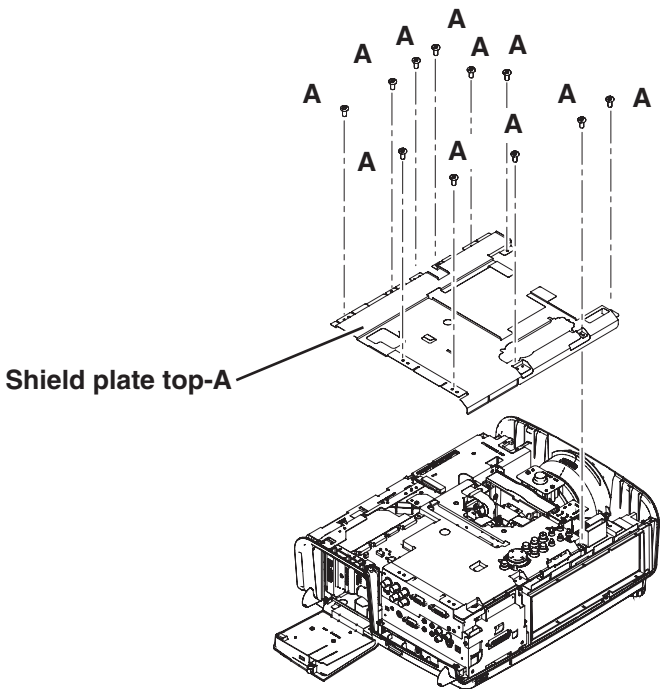


Fig. 3

4-1 Main board ass'y removal-1.

1. Remove 3 screws-A(M3X6) and remove 2 screws-B(M3X6).
2.Remove the Shield plate top-B, Main board ass'y and remove the Shield plate bottom.

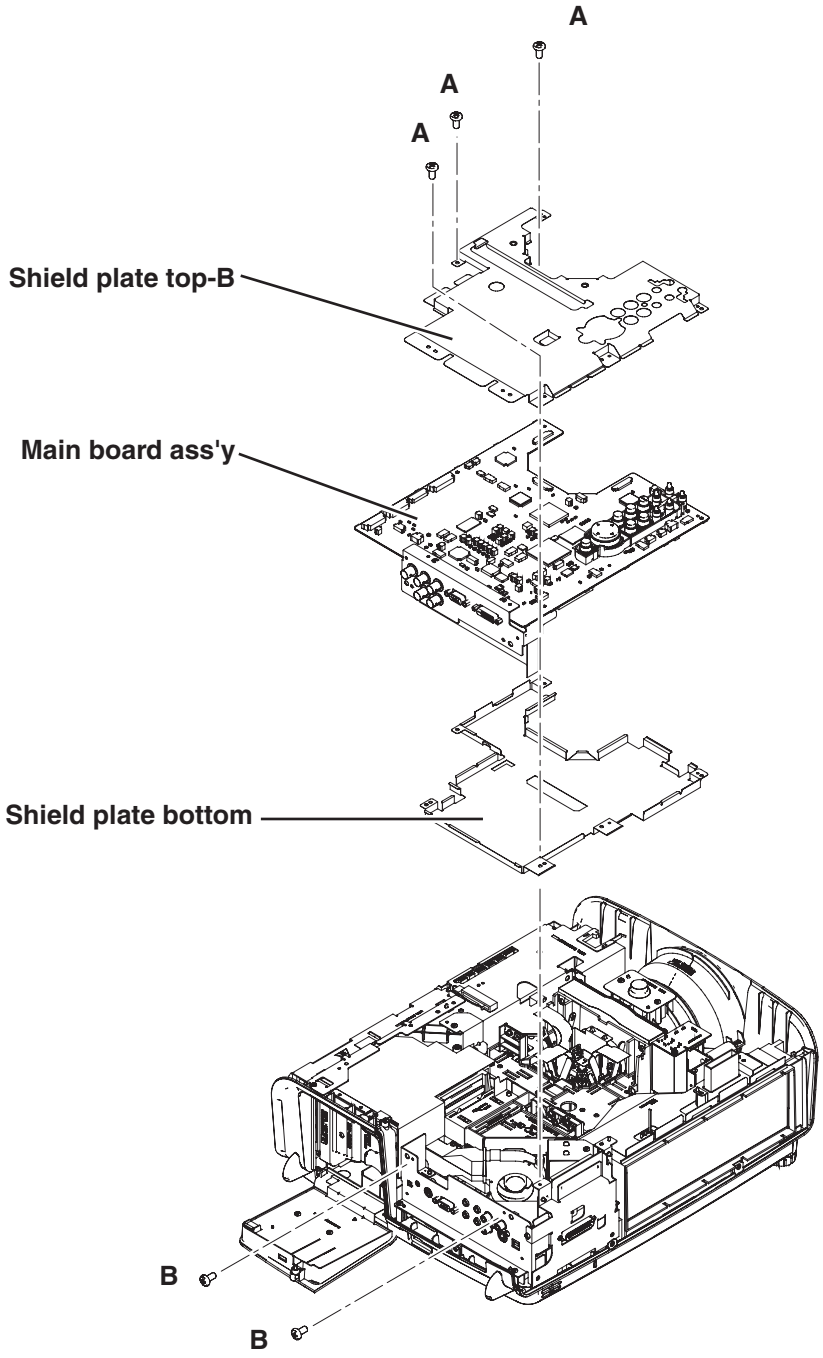


Fig. 4-1

4-2 Main board ass'y removal-2.

1. Unhook and remove the Button upward.
2. Remove the DEC inlay.
3. Remove the Heat sink sheet-A.

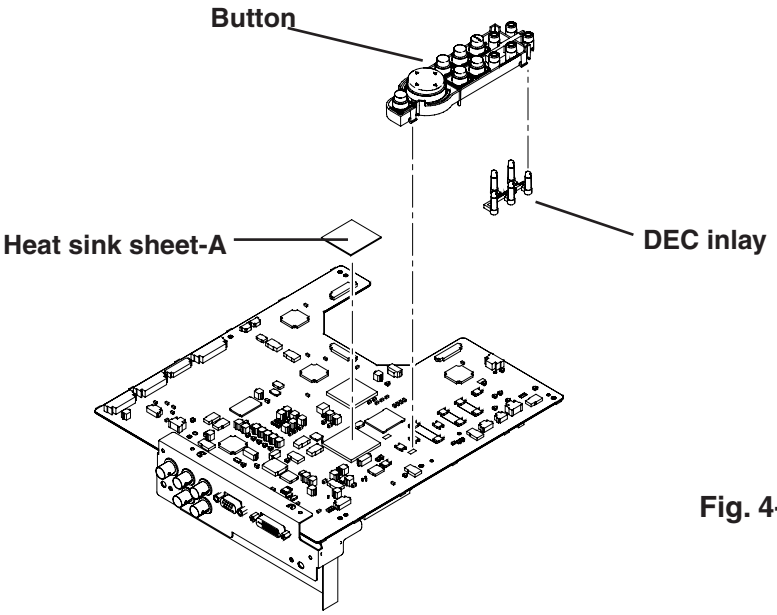


Fig. 4-2

4-3 Main board ass'y removal-3.

1. Remove 1 screw-A(M3X6).
2. Remove 2 nuts-B, 2 nuts-C, 1 screw-D and remove the Main PWB Holder.

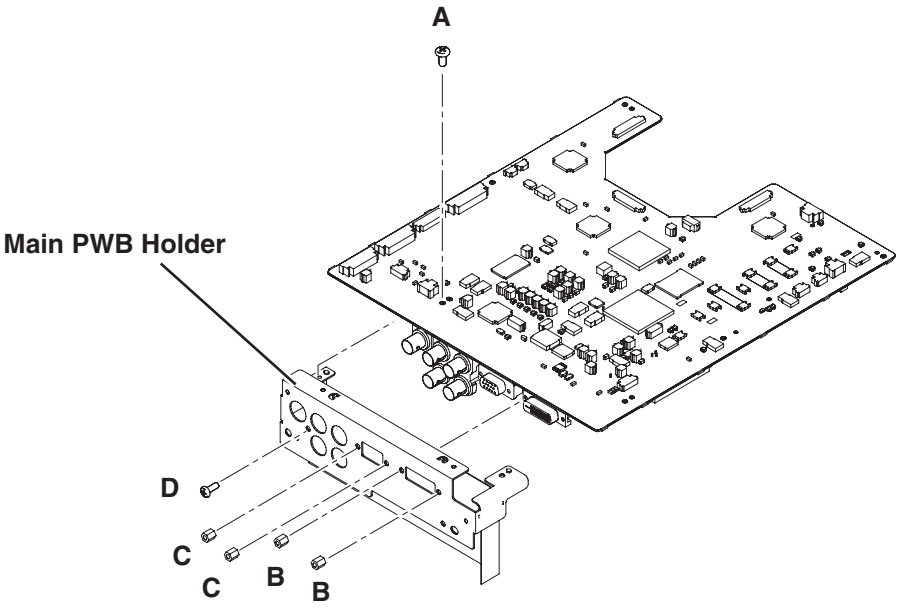
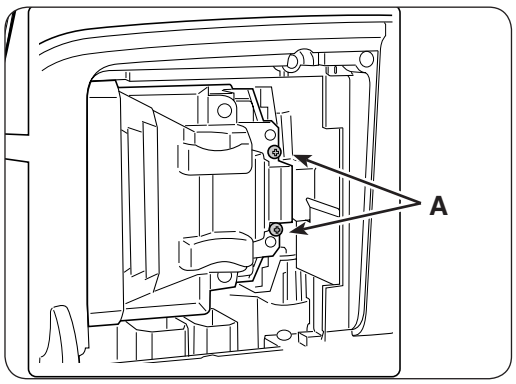


Fig. 4-3

5 Lamp ass'y removal.

1. Loosen 2 screws-A(M3X13) and remove the Lamp ass'y.
2. Remove the Spacer sheet.



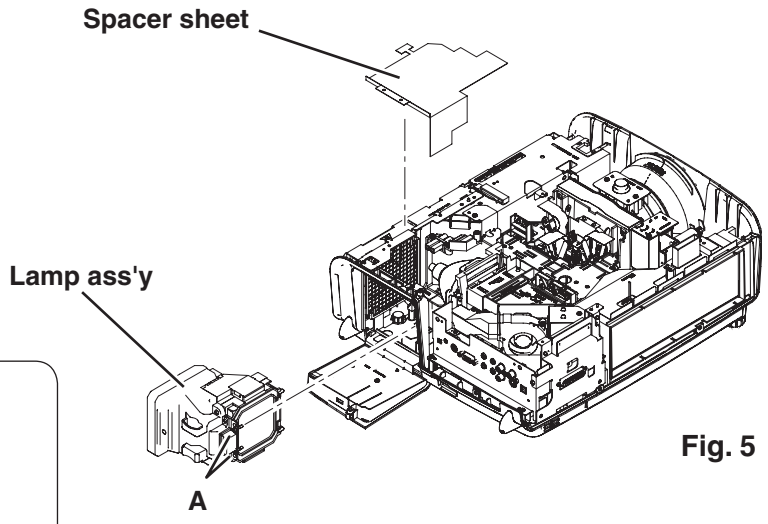


Fig. 5

6-1 Lens cover ass'y removal-1.

1. Remove 4 screws-A(T3X8) and remove the Lens cover ass'y.

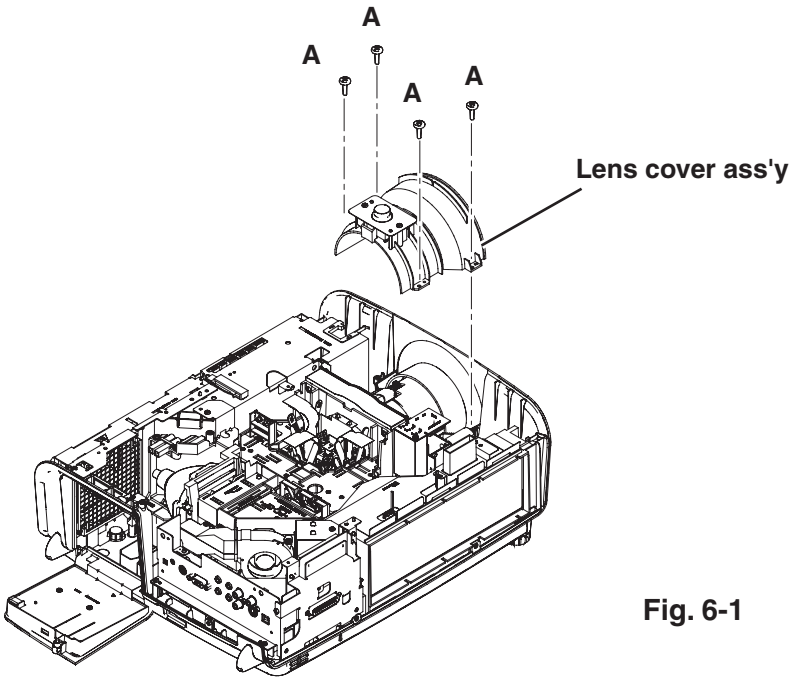


Fig. 6-1

6-2 Lens cover ass'y removal-2.

1. Remove 2 screws-A(T3X8) and remove the Stopper button.
2. Remove the Button, remove the Spring and remove the Holder.

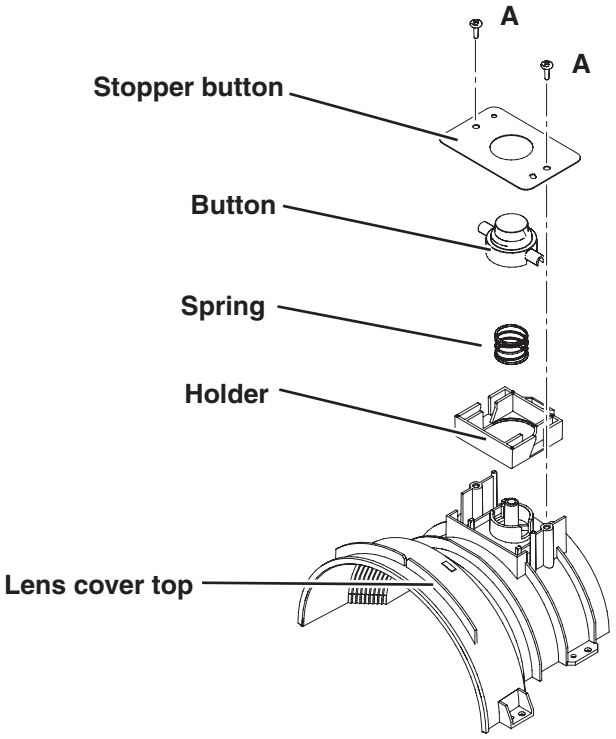


Fig. 6-2

7 Optical engine removal.

1. Remove 5 screws-A(T3X10) and remove the Optical engine.

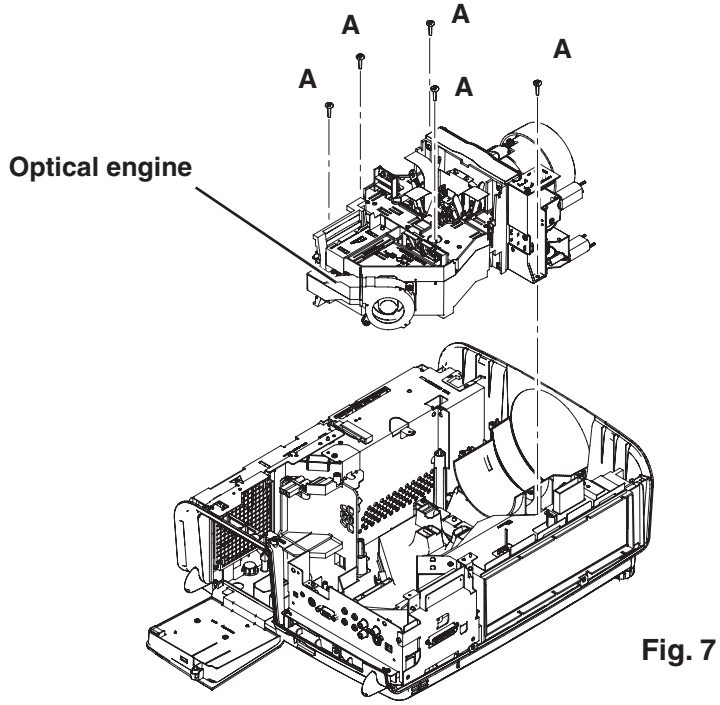


Fig. 7

8 Lens cover bottom removal.

1. Remove 2 screws-A(T3X8) and remove the Optical engine.

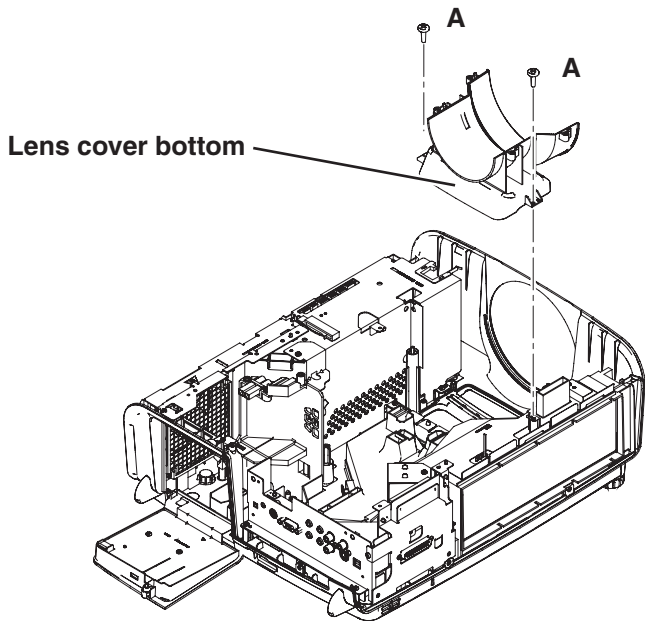


Fig. 8

9-1 AV board & Network joint board ass'y removal-1.

1. Remove 3 screws-A(T3X8) and remove the AV board & Netwark joint board ass'y.

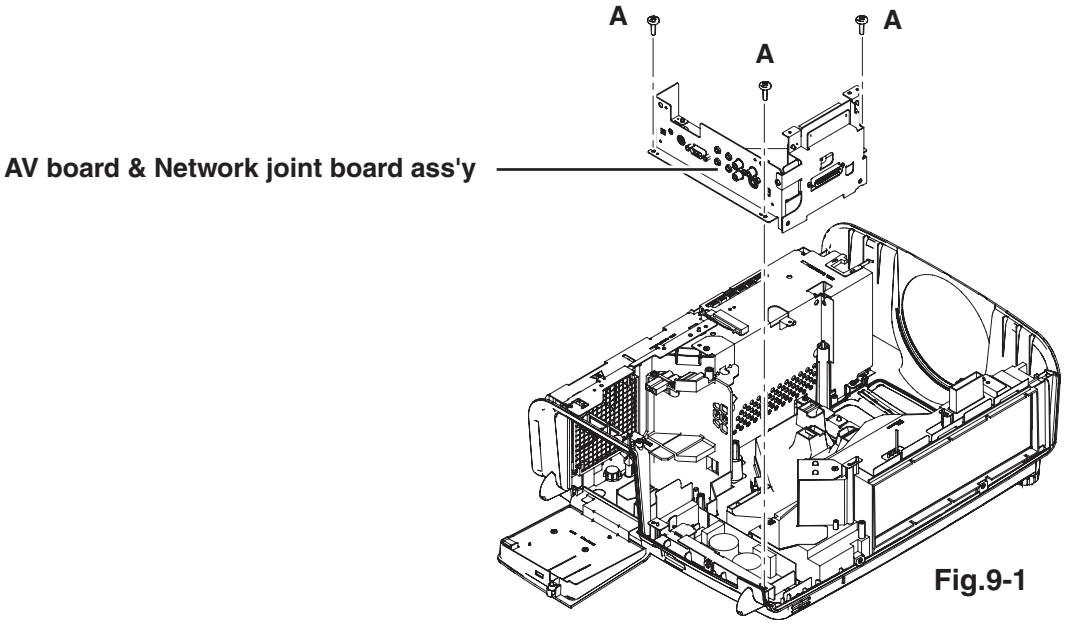


Fig.9-1

9-2 AV board & Network joint board ass'y removal-2.

1. Remove 3 screws-A(M3X6), 4 screws-B(T3x8), 2 screws-C(M2.6X10) and 2 screws-D(T3x8) and 2 nuts-E.
2. Remove the AV board ass'y and remove the Network joint board ass'y.

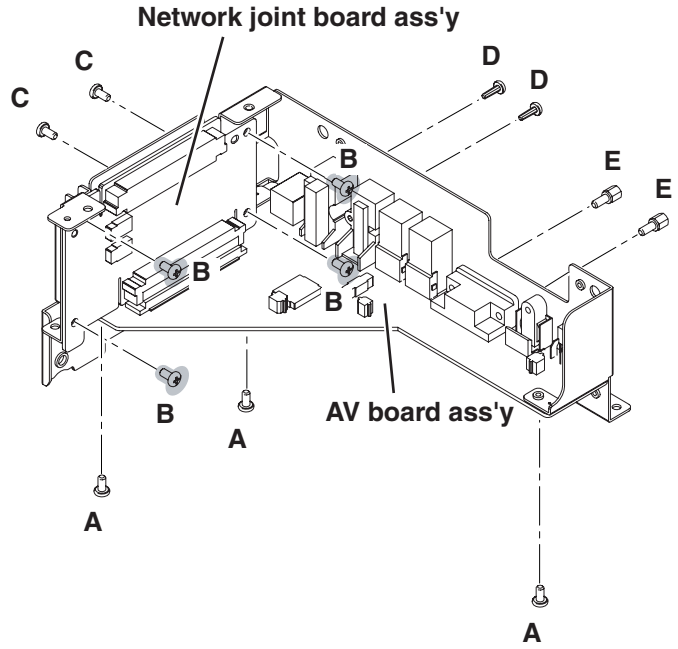


Fig.9-2

10-1 Thermostat(SW901) ass'y removal-1.

1. Remove 1 screw-A(M3X6) and remove the Thermostat(SW901) ass'y.

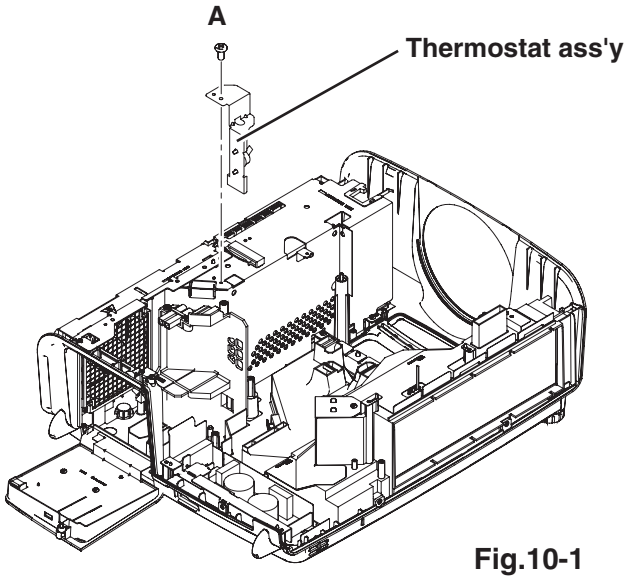


Fig.10-1

10-2 Thermostat(SW901) ass'y removal-2.

1. Remove 2 screws-A(M3X4) and remove the Thermal switch(SW901).

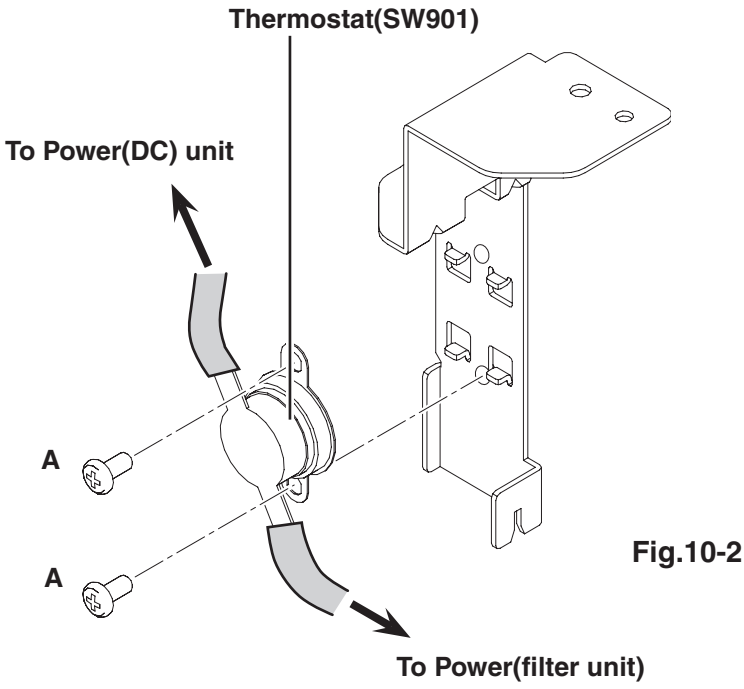


Fig.10-2

11-1 Exhaust Fan(FN901, FN902) ass'y removal-1.

1. Remove 2 screws-A(T3X8) and remove the Exhaust Fan(FN901, FN902) ass'y.

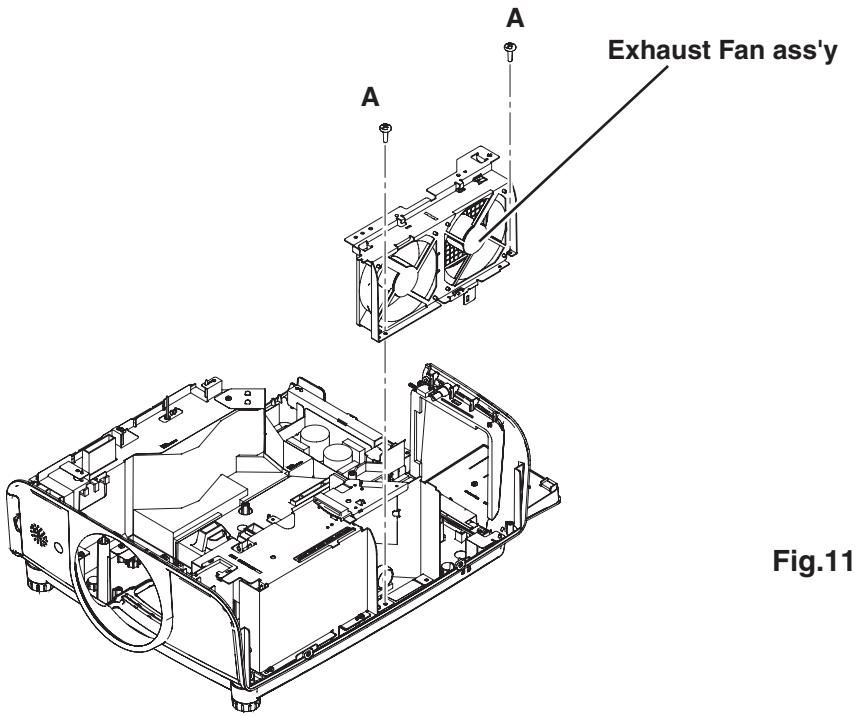


Fig.11-1

11-2 Exhaust Fan(FN901, FN902) ass'y removal-2.

1. Remove 4 screws-A(M3X28), remove the Fan guard cover and the Fan(FN901).
2. Remove 4 screws-B(M3X28) and remove the Fan(FN902).

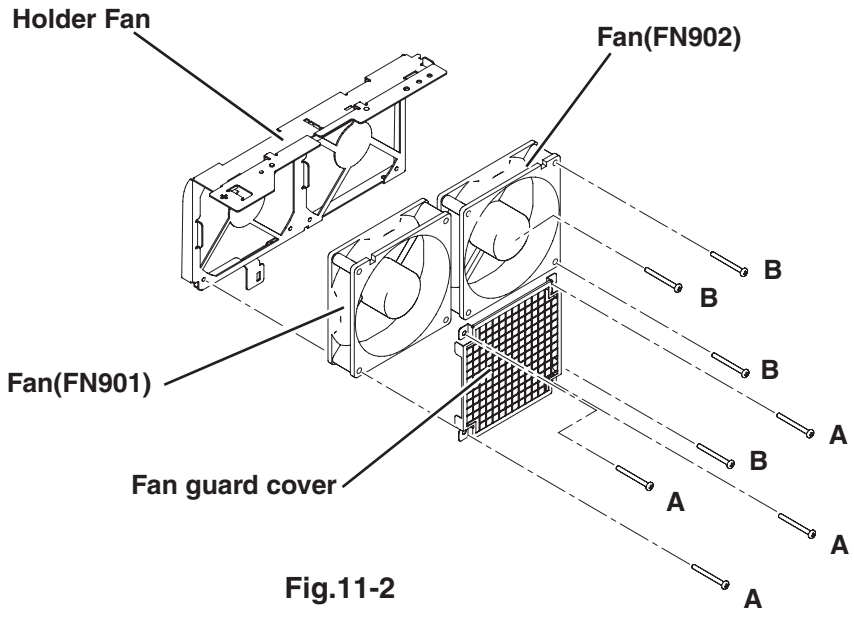


Fig.11-2

12 Exhaust Fan duct removal.

1. Remove 2 screws-A(T3X6) and remove the Lamp ballast connector.
2. Remove 2 screws-B(T3X10) and remove Exhaust Fan duct.

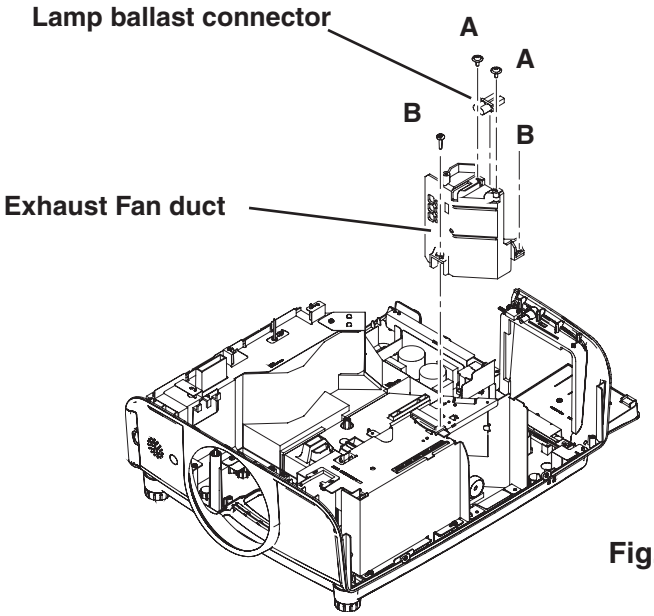


Fig.12

13-1 Power board(Ballast) ass'y removal-1.

1. Remove 1 screw-A(M3X6), 4 screws-B(T3X8) and remove the Power board(Ballast) ass'y.

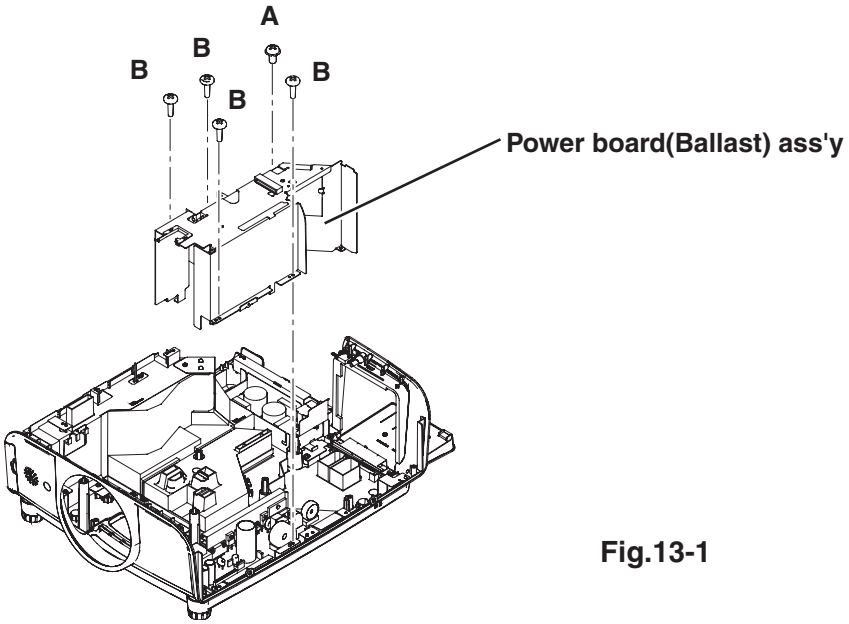


Fig.13-1

13-2 Power board(Ballast) ass'y removal-2.

1. Remove the 2 rivets A and B, and take off the trigger box. (Press the edge of the rivet-A and remove the rivets)
2. Remove 2 Fixer clamp and remove the Power board(Ballast).
3. Remove the Spacer sheet.

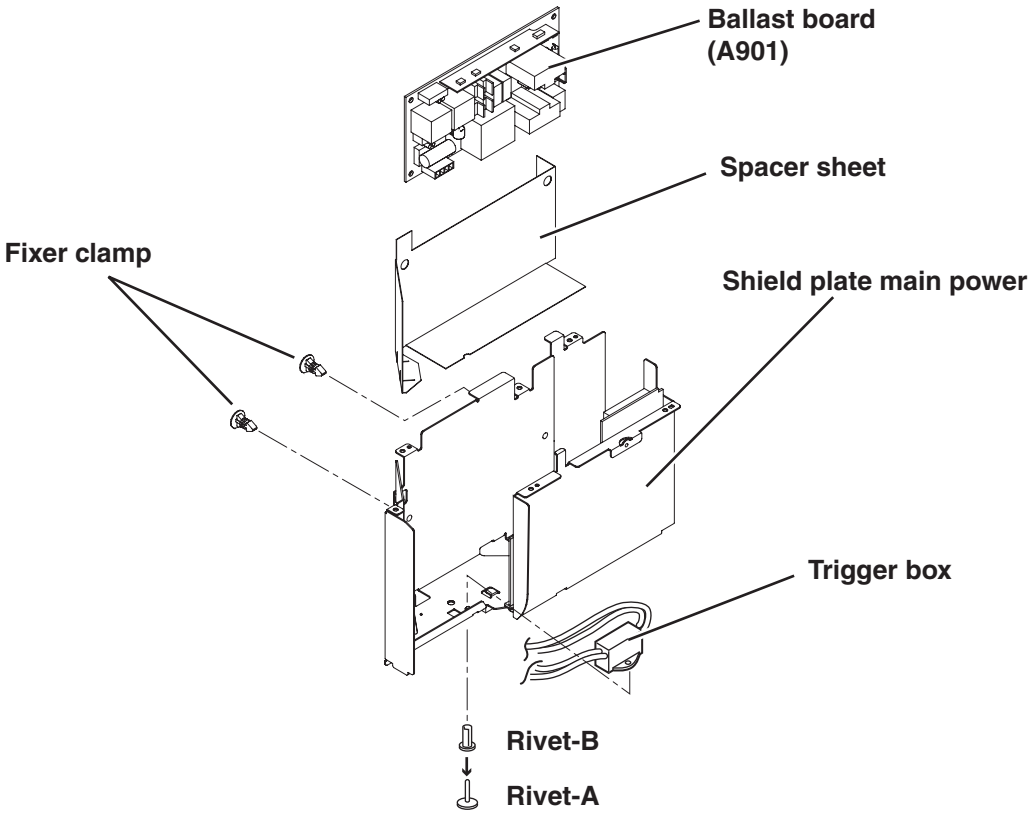


Fig.13-2

14 Power board ass'y removal.

1. Remove 1 screw-A(M3X8), 3 screws-B(T3X8) and remove the Power board ass'y.
2. Remove the Spacer sheet.

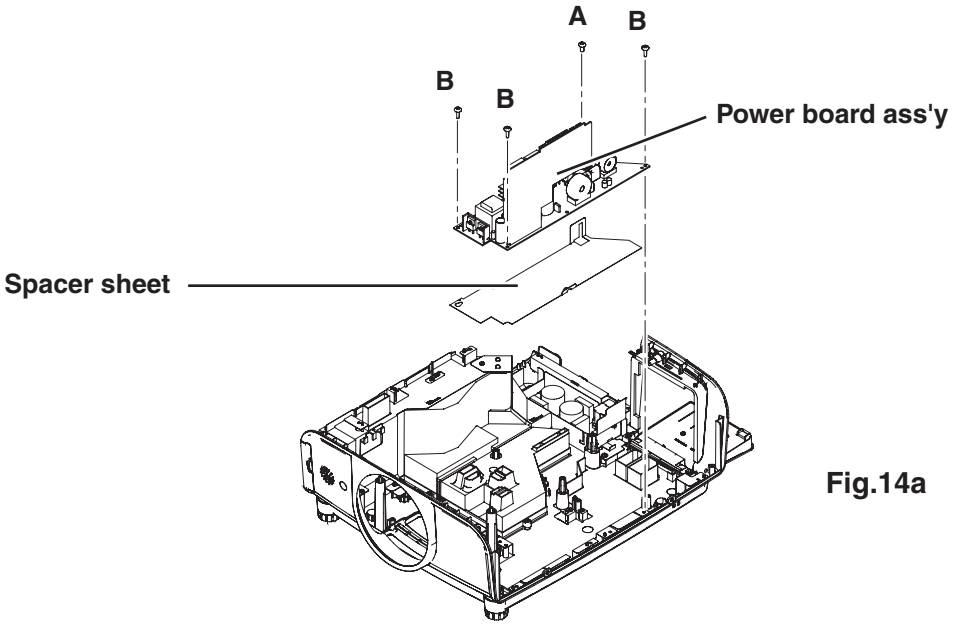


Fig.14a

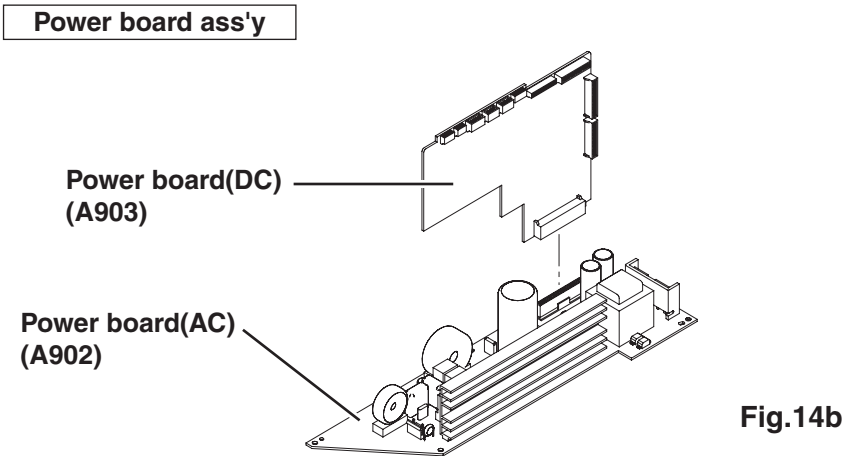


Fig.14b

15-1 Power board(Filter) ass'y removal-1.

1. Remove 1 screw-A(M3X6), 2 screws-B(T3X8) and remove the Power board(Filter) ass'y.

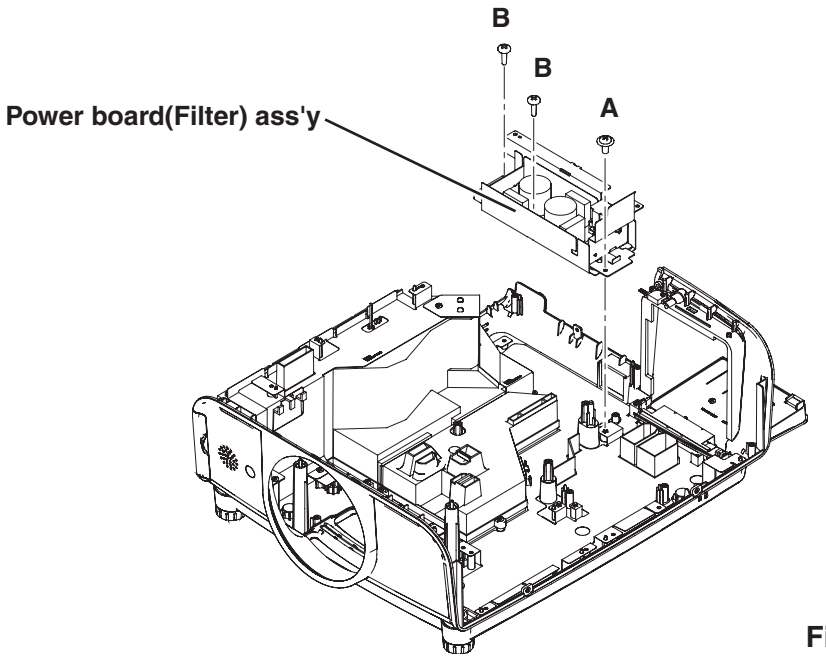


Fig.15-1

15-2 Power board(Filter) ass'y removal-2.

1. Remove 1 screw-A(M2.5X5) and remove the Fuse cover.
2. Remove the Holder PWB, remove the Spacer sheet and remove the Power board(Filter).

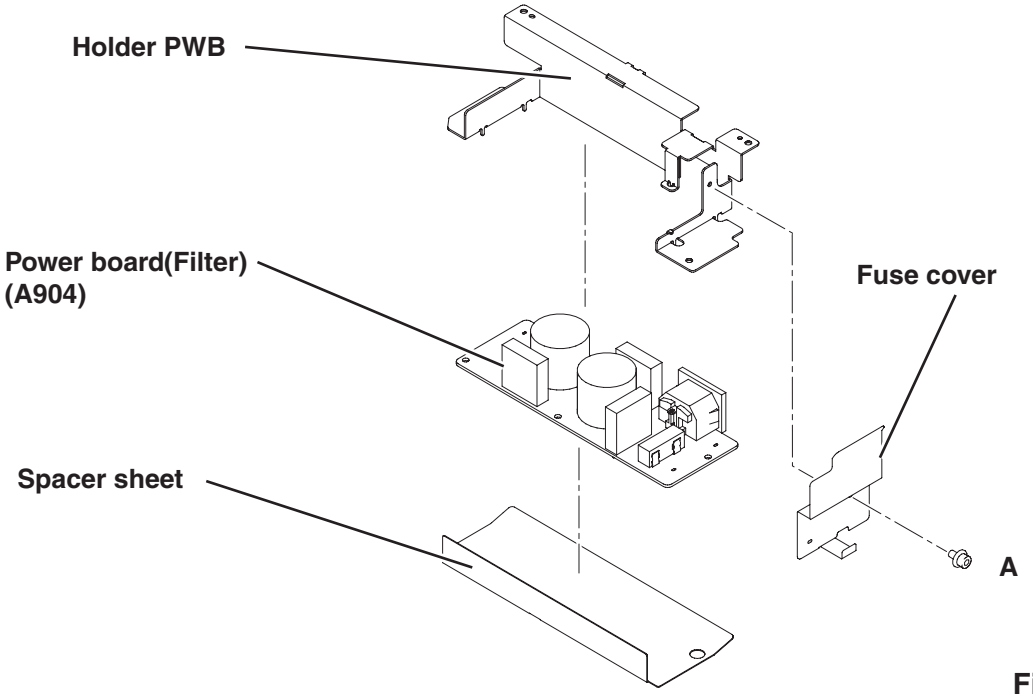


Fig.15-2

16-1 Intake Fan(FN904,FN905)removal-1.

1. Pull out air filter base ass'y.
2. Remove 5 screws-A(T3X8) and remove the intake duct ass'y.

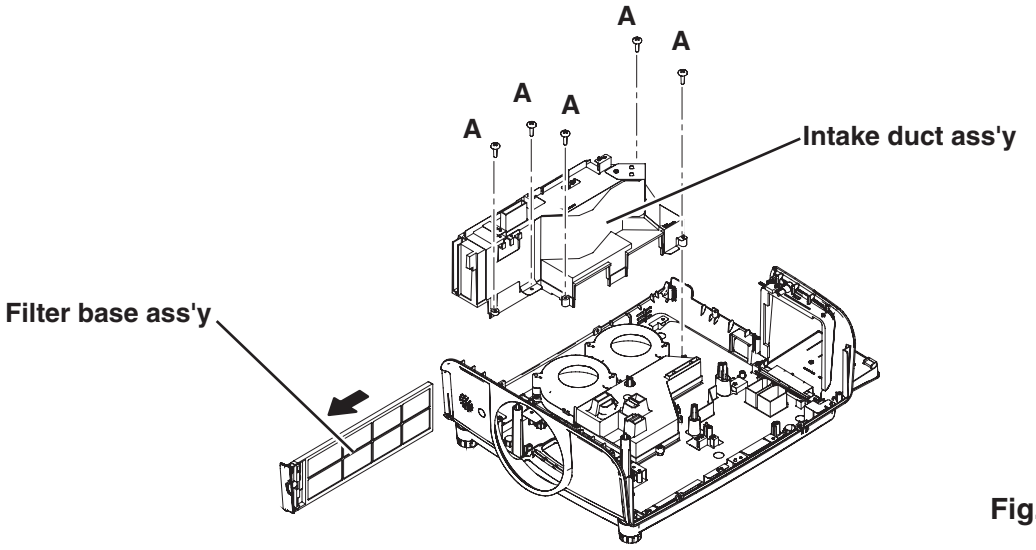


Fig.16-1

16-2 Intake Fan(FN904,FN905)removal-2.

1. Remove 1 screw-A(M3X6), the Shield plate-A and remove the Shield plate-B.

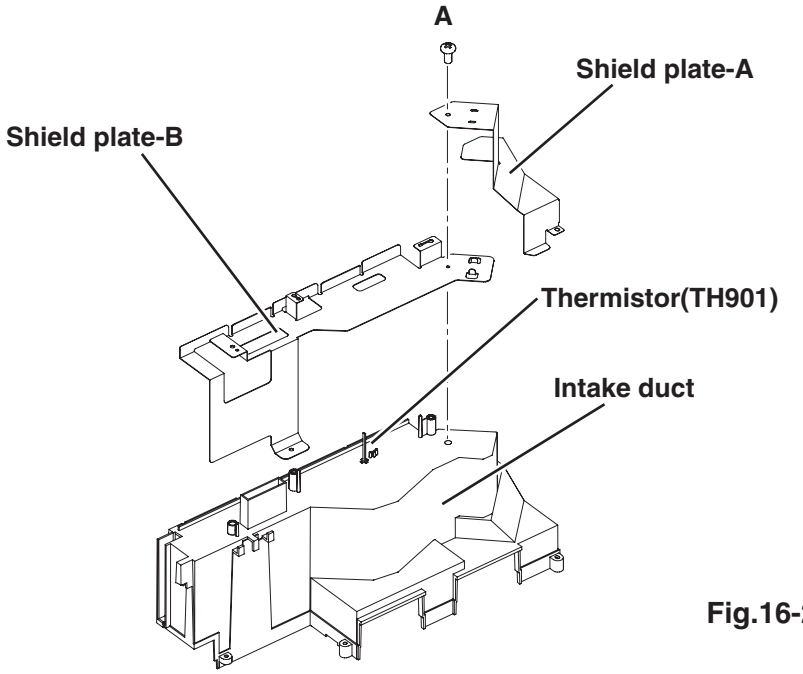


Fig.16-2

16-3 Intake Fan(FN904,FN905)removal-3.

1. Remove 4 screws-A(T3X8) and remove the Panel duct.
2. Remove 2 screws-B(T3X10) and remove the Fan(FN904).
2. Remove 2 screws-C(T3X10) and remove the Fan(FN905).

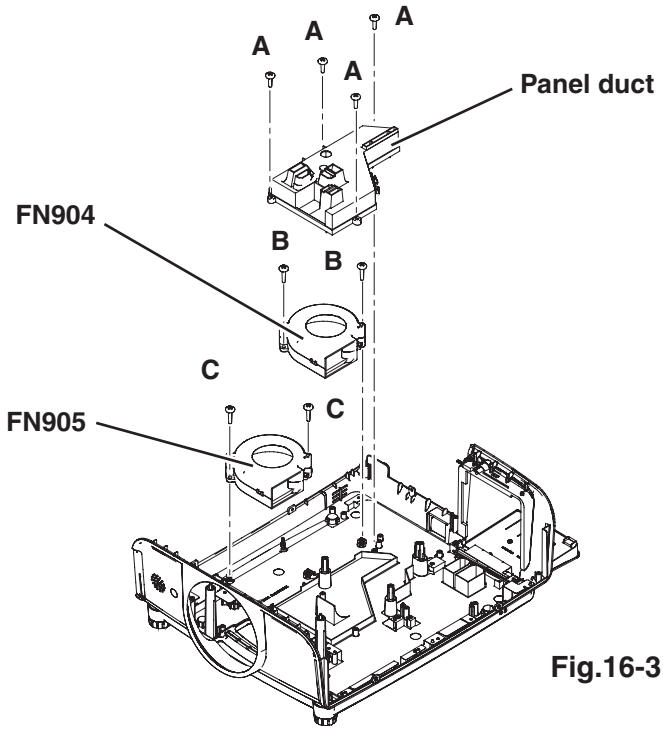


Fig.16-3

17 Shield plate BTM removal.

1. Remove 2 screws-A(T3X8) and remove the Shield plate BTM.
2. Remove the Lamp cover ass'y.

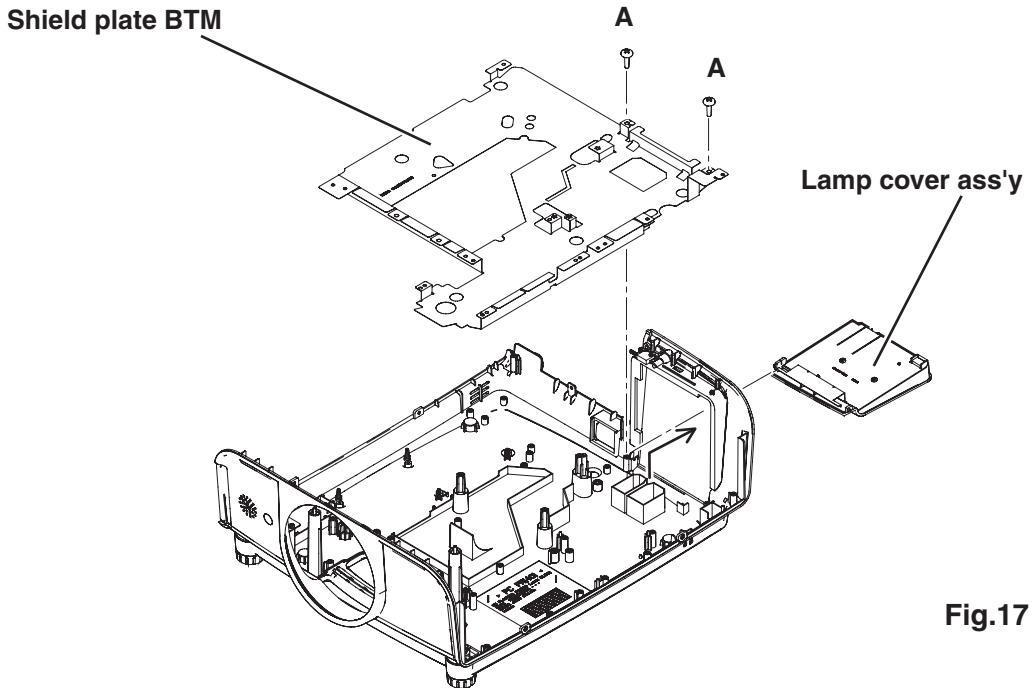


Fig.17

18 Lamp cover ass'y disassemblies.

1. Remove 2 screws-A(T3X8) and remove the Shield plate.

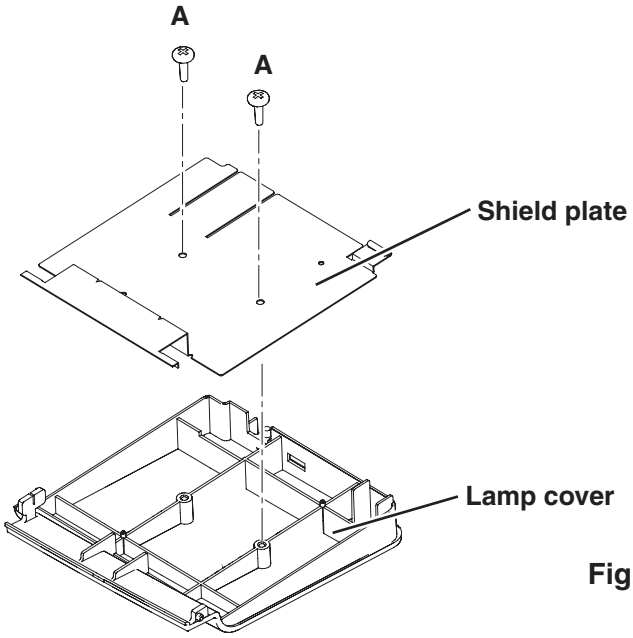


Fig.18

19 Lamp cover switch and R/C Front board removal.

1. Remove 1 screw-A(T3X8) and remove the R/C Front board(A2850).
2. Remove 1 screw-B(T3X12) and remove the Lamp cover switch(SW902).
3. Remove the Speaker(SP901) upward.

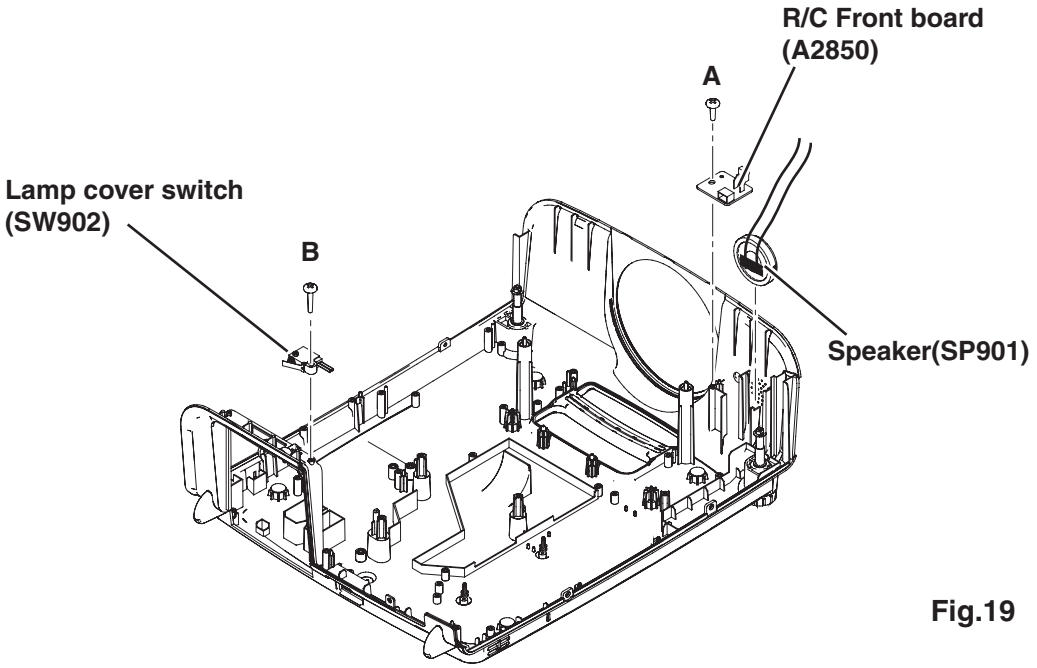
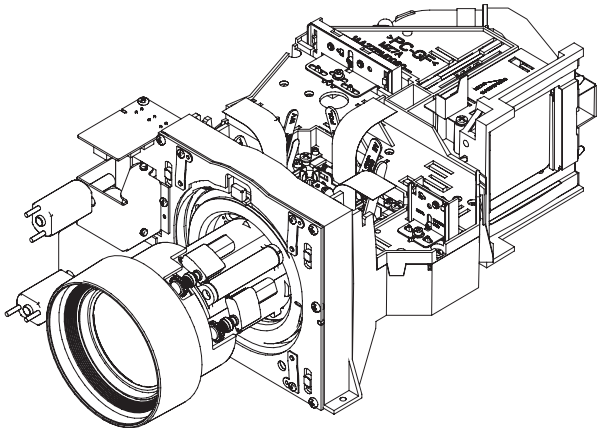


Fig.19



20 Projection lens removal.

1. Press and hold the Fixing lever-A and turn the Projection lens counterclockwise (about 1/6 turn) and then take it off.

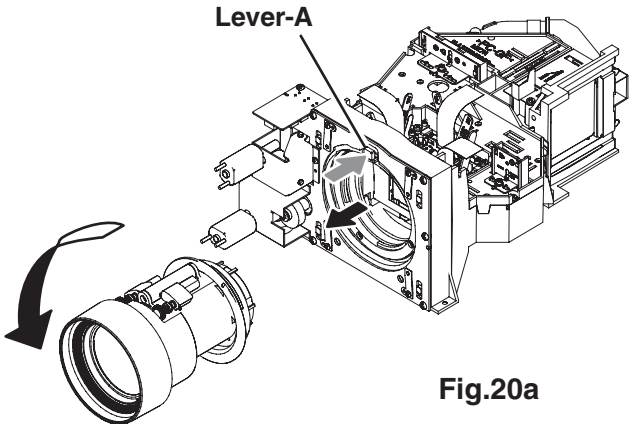


Fig.20a

Note in the Mounting Projection Lens

Insert the Projection lens into the guide at a position where the both markers on the projection lens and the mounting base come together, and turn it clockwise until the Fixing Lever is set to the fixing position.

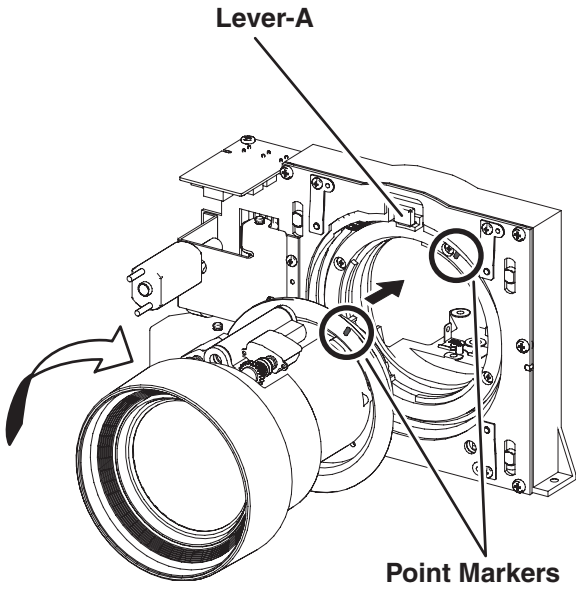


Fig.20b

21-1 LCD panel/Prism ass'y removal

1. Loosen 3 screws-A(M2.5X10.2) and disconnect 1 socket-C of grounding wire, and then remove the LCD panel/Prism ass'y.

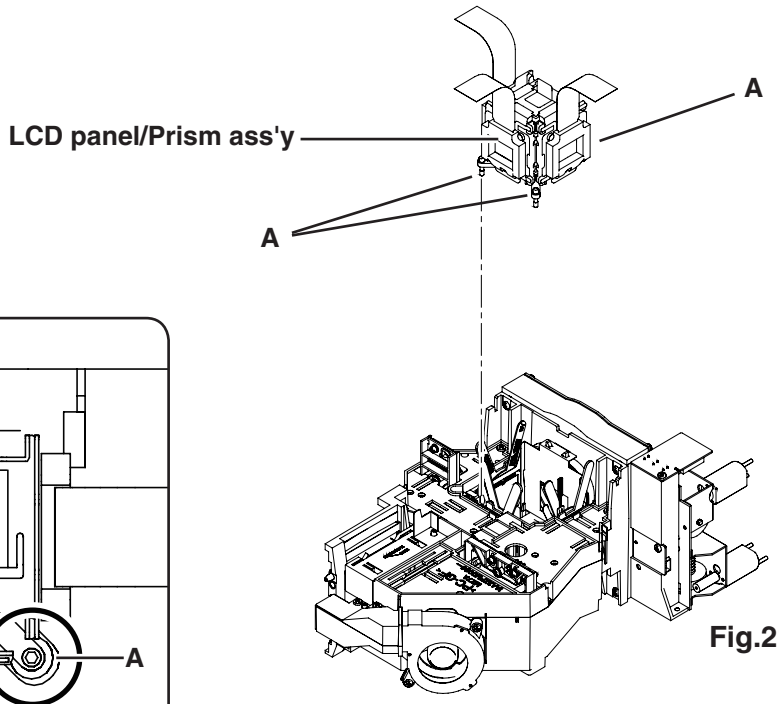


Fig.21a

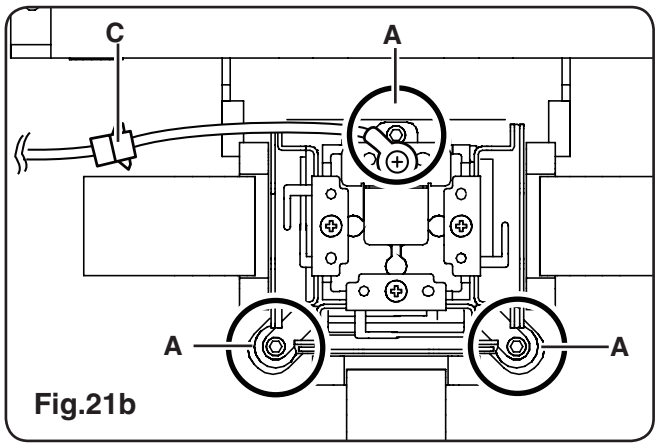


Fig.21b

Note; Do not replace the LCD panel separately otherwise it cannot obtain proper picture. Do not touch the prism, the LCD panel and electrode of flexible cable.

IMPORTANT NOTICE on LCD Panel/Prism Ass'y Replacement

LCD panels used for this model cannot be replaced separately. Do not disassemble the LCD Panel/Prism Ass'y. These LCD panels are installed with precision at the factory. When replacing the LCD panel, should be replaced whole of the LCD panels and prism ass'y at once.

After replacing LCD Panel/Prism ass'y, please check the following points.

- Check that there is no color shading at the top, bottom, left or right of the screen. If there is, try to remove the shading following to the chapter "Optical Adjustment".
- Check the white balance. If it needs the adjustment, adjust the white balance following to the "White Balance Adjustment" and "Common Centre Adjustment" in the chapter "Electrical Adjustment".
- Check the white uniformity on the screen.
  If you find the color shading at the some part of the screen, it needs to take the color shading adjustment. This adjustment should be performed by a computer and it also requires a special software "Color Shading Correction". The software will be supplied separately and can be ordered as follows;

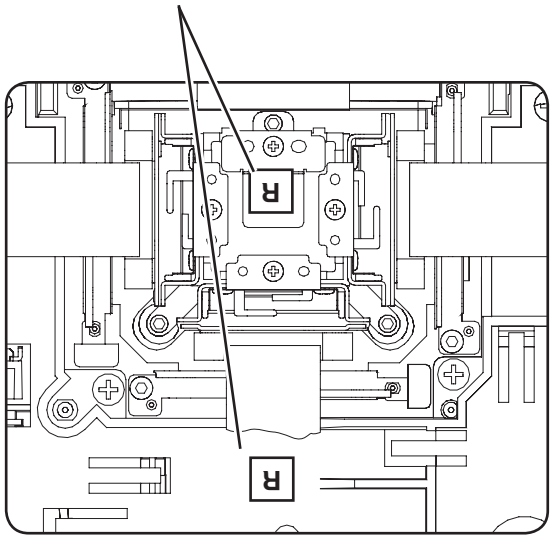
COLOR SHADING CORRECTION Ver. 4.00
Service Parts No. 645 075 9611

LCD Panel Type Check

There are 2 types combination of the LCD panel/prism assembly and the optical unit, named Type-R and Type-L. Since both have no compatibility, each type should be combined with the same type, and the specific parts should be used. If not, the poor optical characteristics may degrade the quality of a projected image.
Confirm the "R" label or "L" label on top of the LCD panel/ prism assembly and the optical unit.

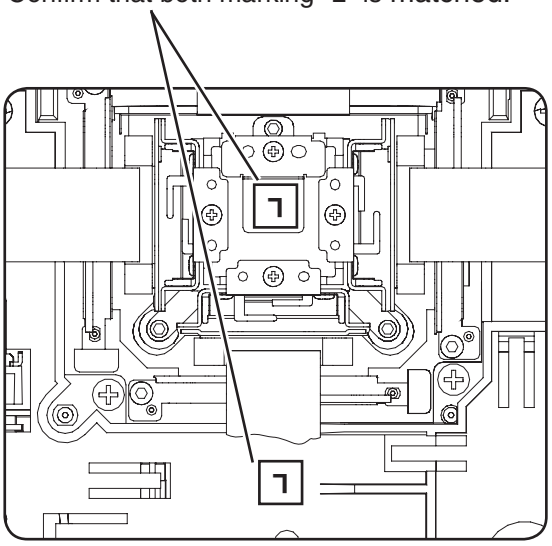
NOTE:
LCD panel/prism assembly should be used with the same type of the optical unit.

Confirm that both marking "R" is matched.



LCD Panel/Prism Ass'y Type-R

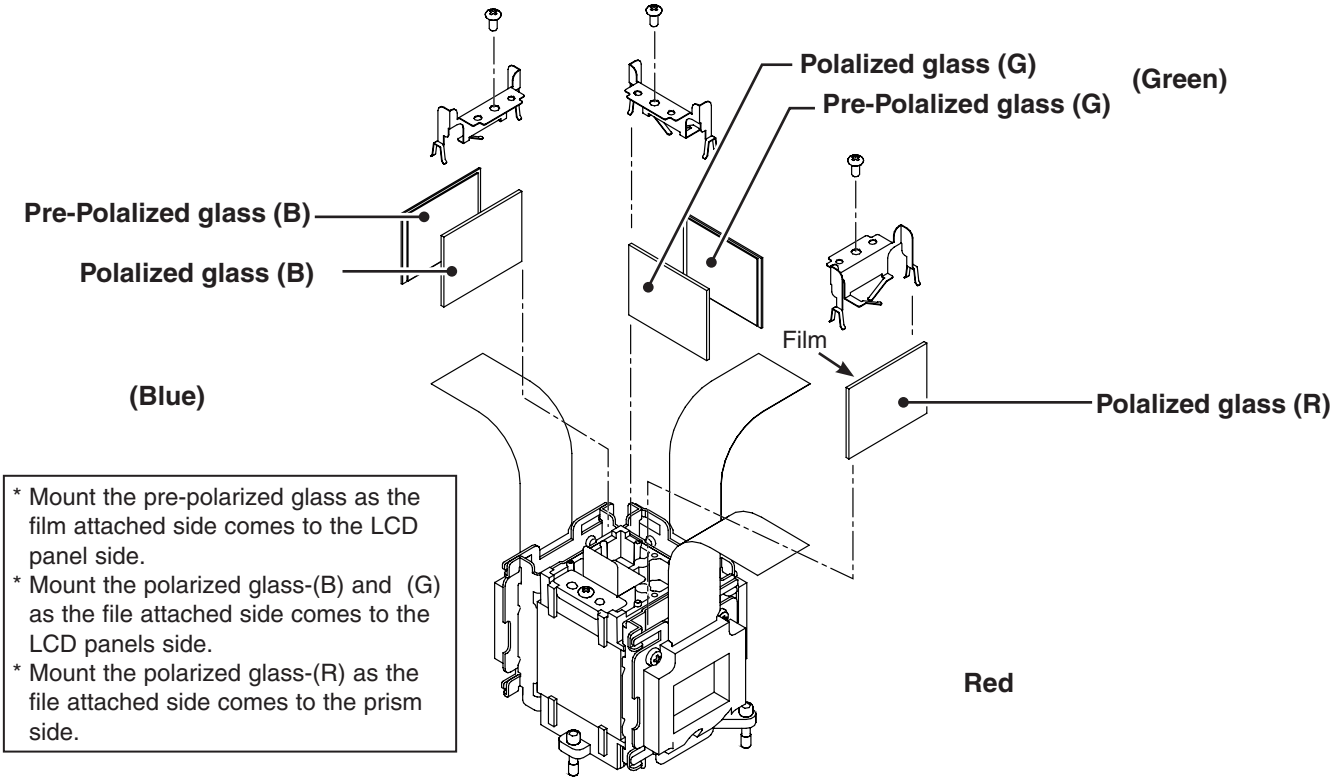
Confirm that both marking "L" is matched.



LCD Panel/Prism Ass'y Type-L

21-2 Polarized glass, Pre-Polarized glass removal

1. Remove each screw (M2X4) and holder.



* Mount the pre-polarized glass as the film attached side comes to the LCD panel side.
* Mount the polarized glass-(B) and (G) as the file attached side comes to the LCD panels side.
* Mount the polarized glass-(R) as the file attached side comes to the prism side.

22 Lens mount removal.

1. Remove 4 screws-A(M2.5X10) and remove the Lens mount.

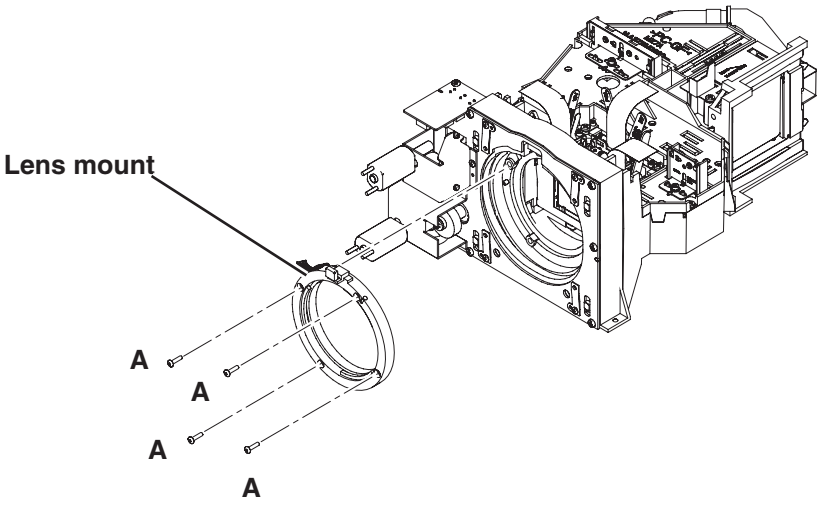


Fig.22

23 Lens shift ass'y removal.

1. Remove 4 screws-A(M3X6) and remove the Lens shift ass'y.

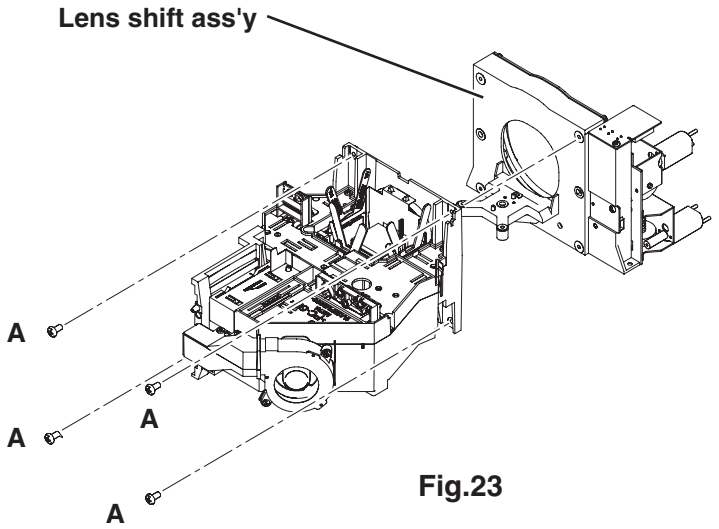


Fig.23

24 Condenser lens ass'y removal.

1. Remove 1 screw-A(M2.5X5) and remove the Condenser lens ass'y.
2. Remove 2 screws-B(M2.5X5) and remove the Lens holder ass'y.
3. Remove 1 screw-C(T3X6) and remove the Condenser lens.

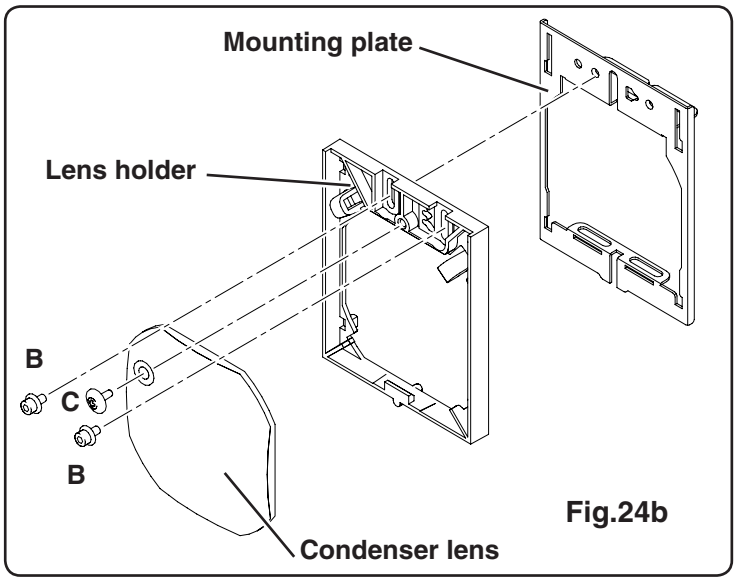


Fig.24b

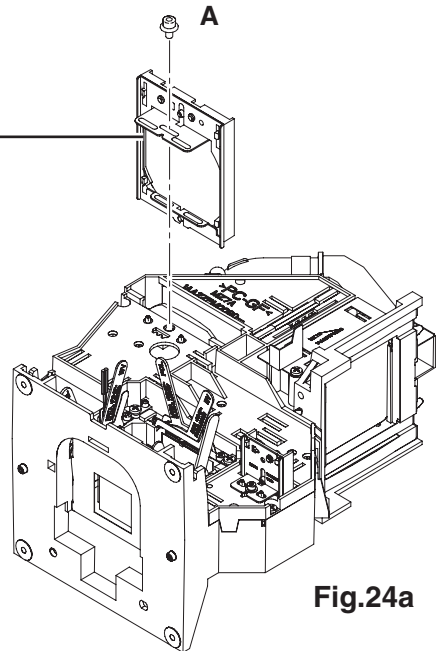


Fig.24a

Lens holder ass'y

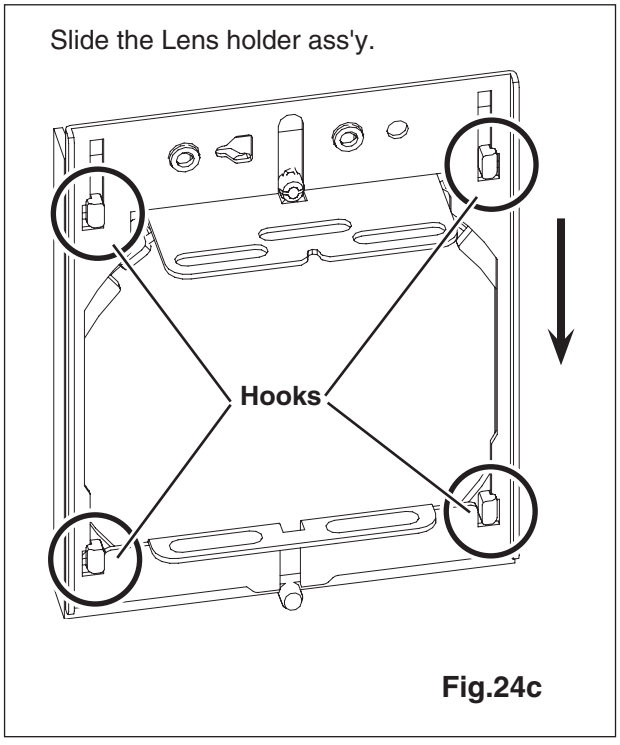


Fig.24c

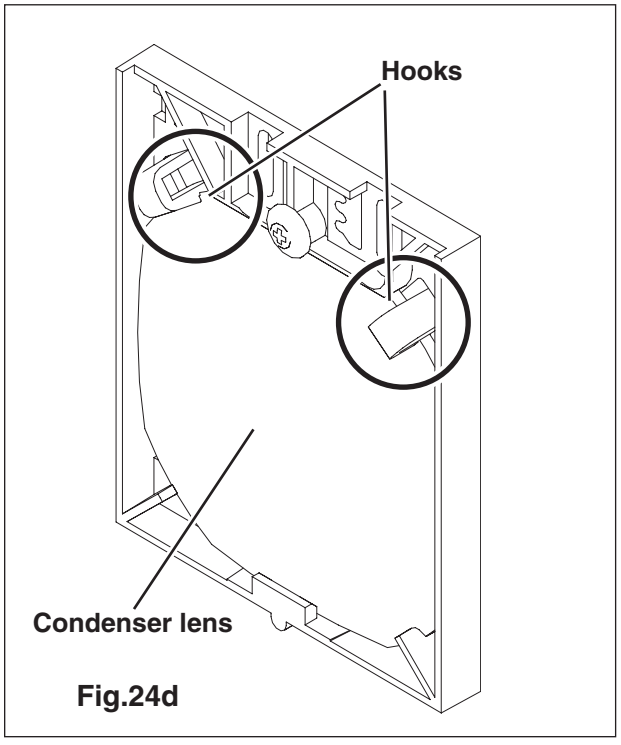


Fig.24d

25 Relay lens ass'y removal.

1. Remove 1 screw-A(M2.5X5) and remove the Relay lens ass'y.
2. Remove 1 screw-B(M2.5X5) and remove the Lens holder ass'y.
3. Remove 1 screw-C(T3X6) and remove the Relay lens.

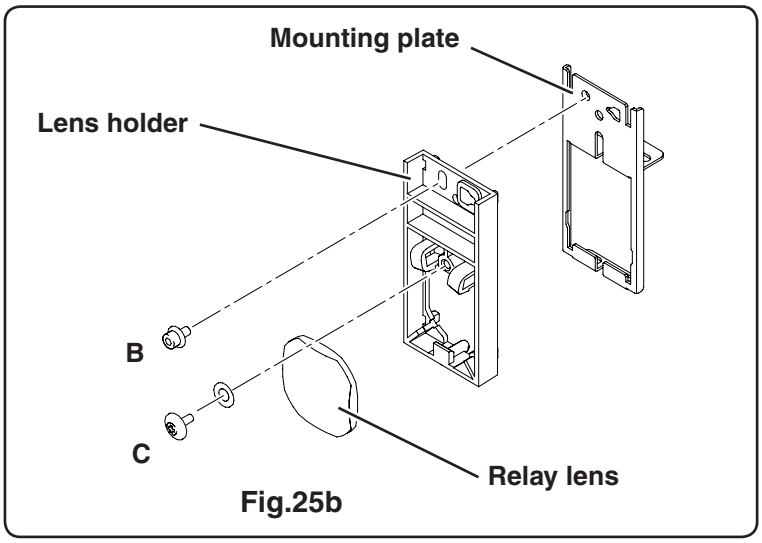


Fig.25b

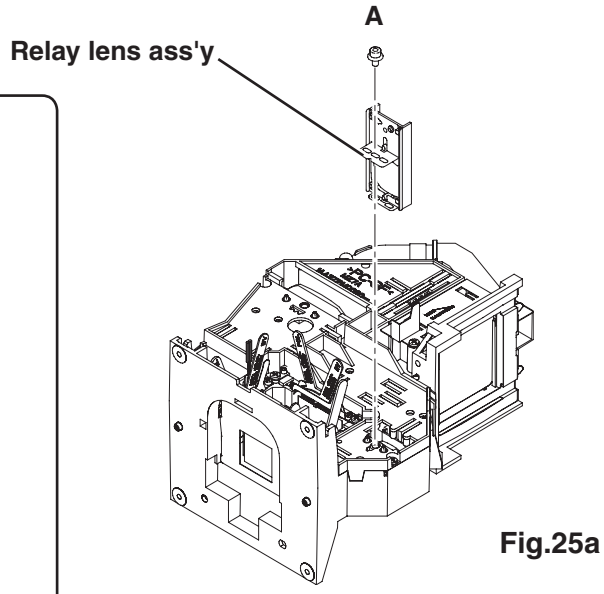


Fig.25a

Slide the Lens holder ass'y.

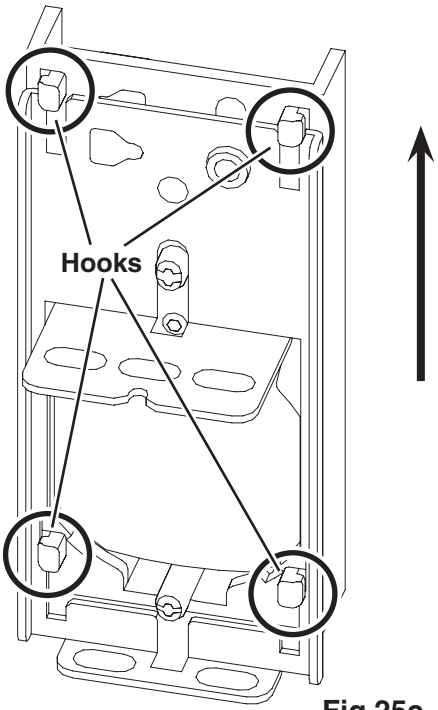


Fig.25c

Lens holder ass'y

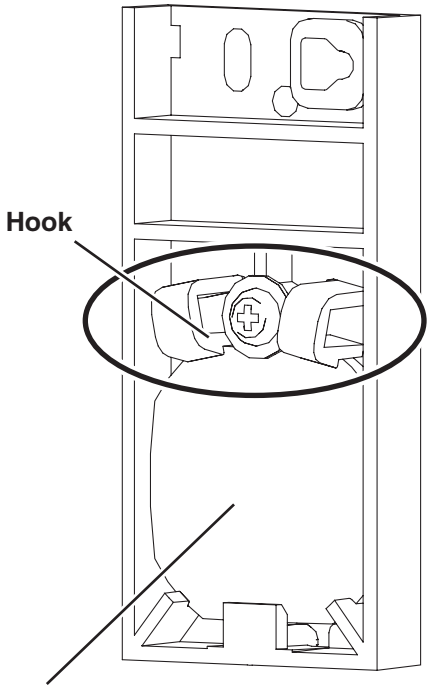


Fig.25d

26 Green Polarized glass ass'y and Optical filter ass'y removal.

1. Remove 1 screw-A(M2.5X6) and remove the stopper.
2. Remove the Polarized glass ass'y and remove the Optical filter ass'y.

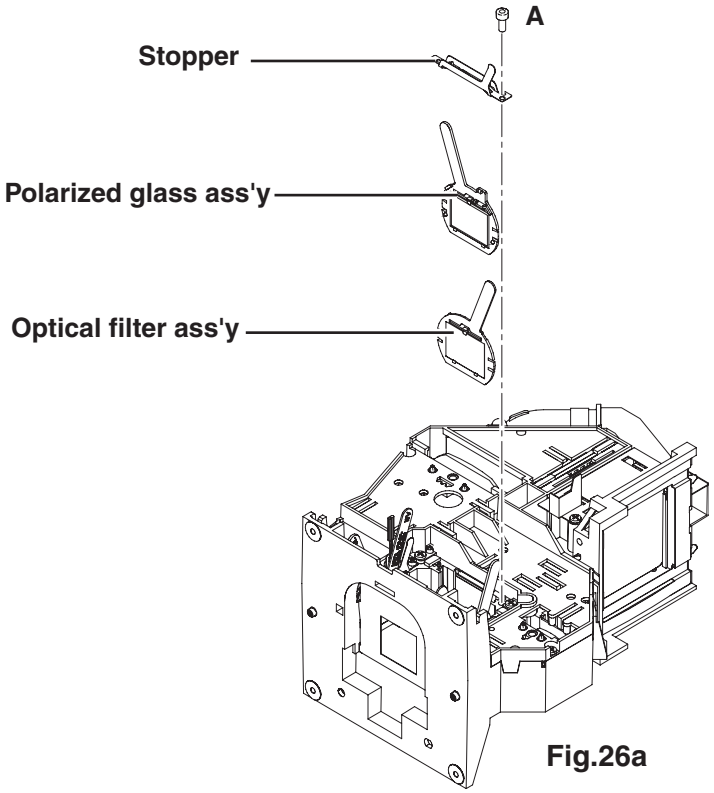
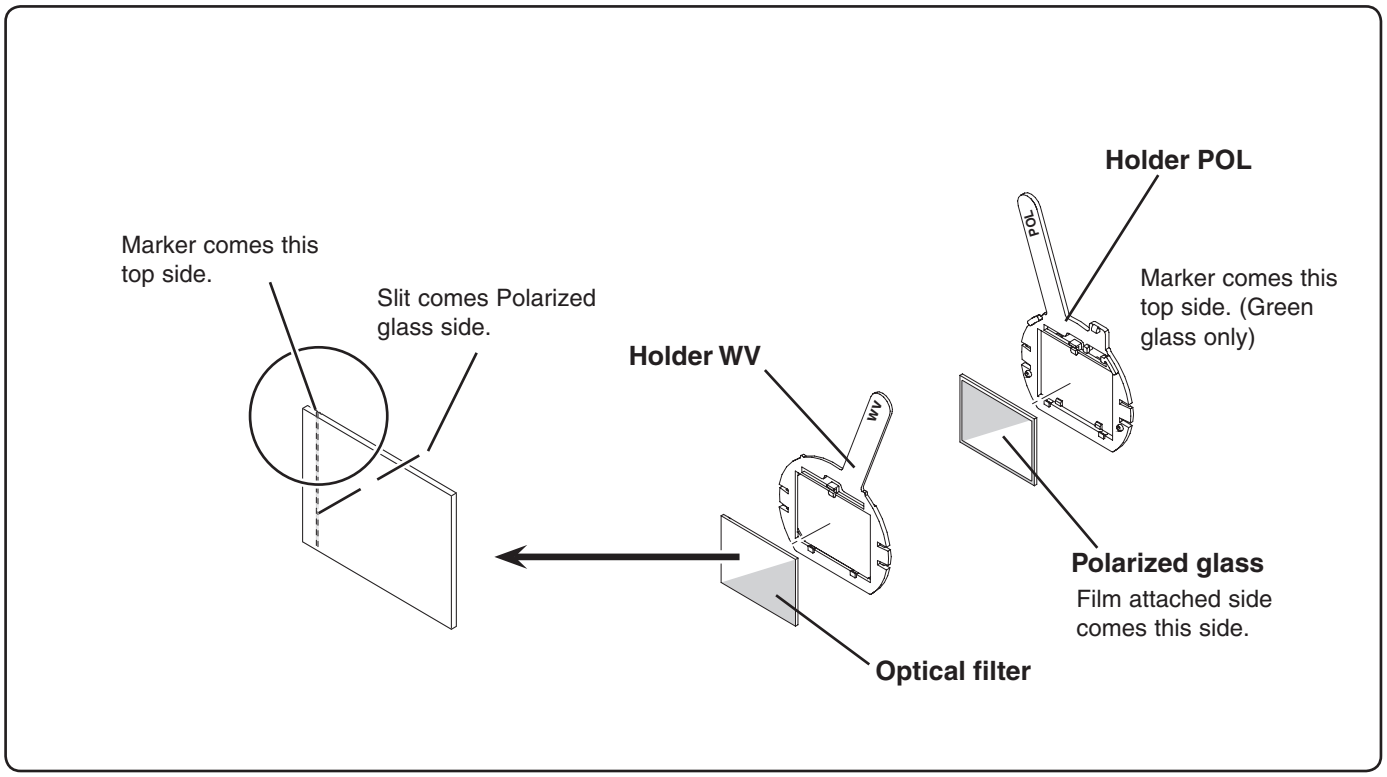


Fig.26a



* The optical filter must be used with the specified parts according to the mounted prism assembly type, Type-L or Type-R. See the parts list for further details.

27 Blue Polarized glass ass'y and Optical filter ass'y removal.

1. Remove 1 screw-A(M2.5X6) and remove the stopper.
2. Remove the Polarized glass ass'y and remove the Optical filter ass'y ass'y.

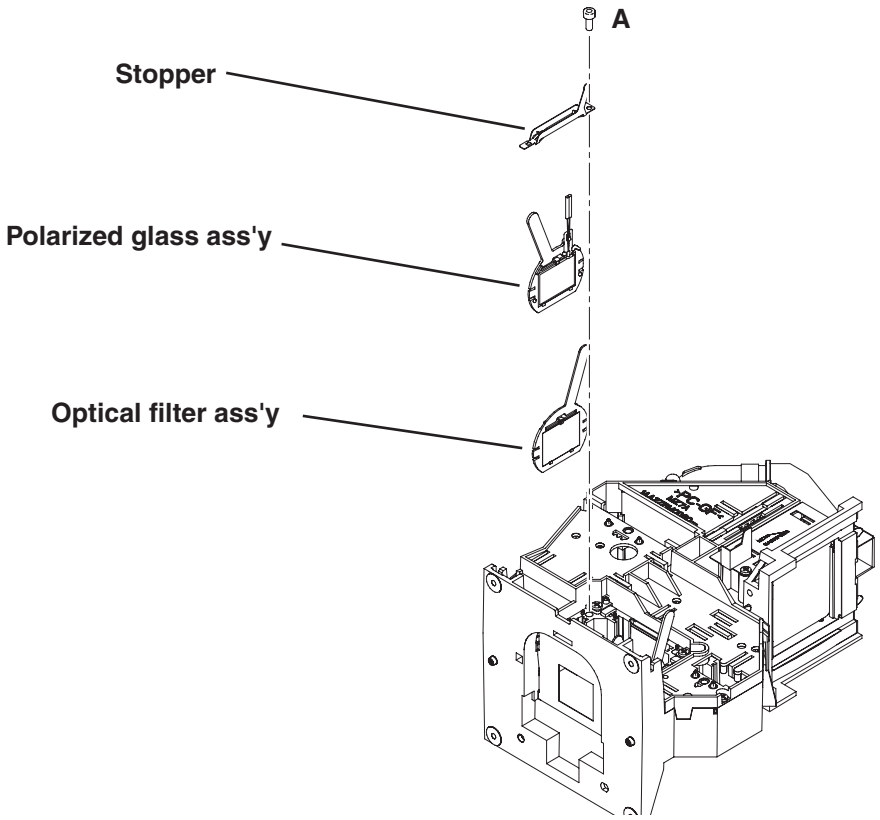


Fig.27a

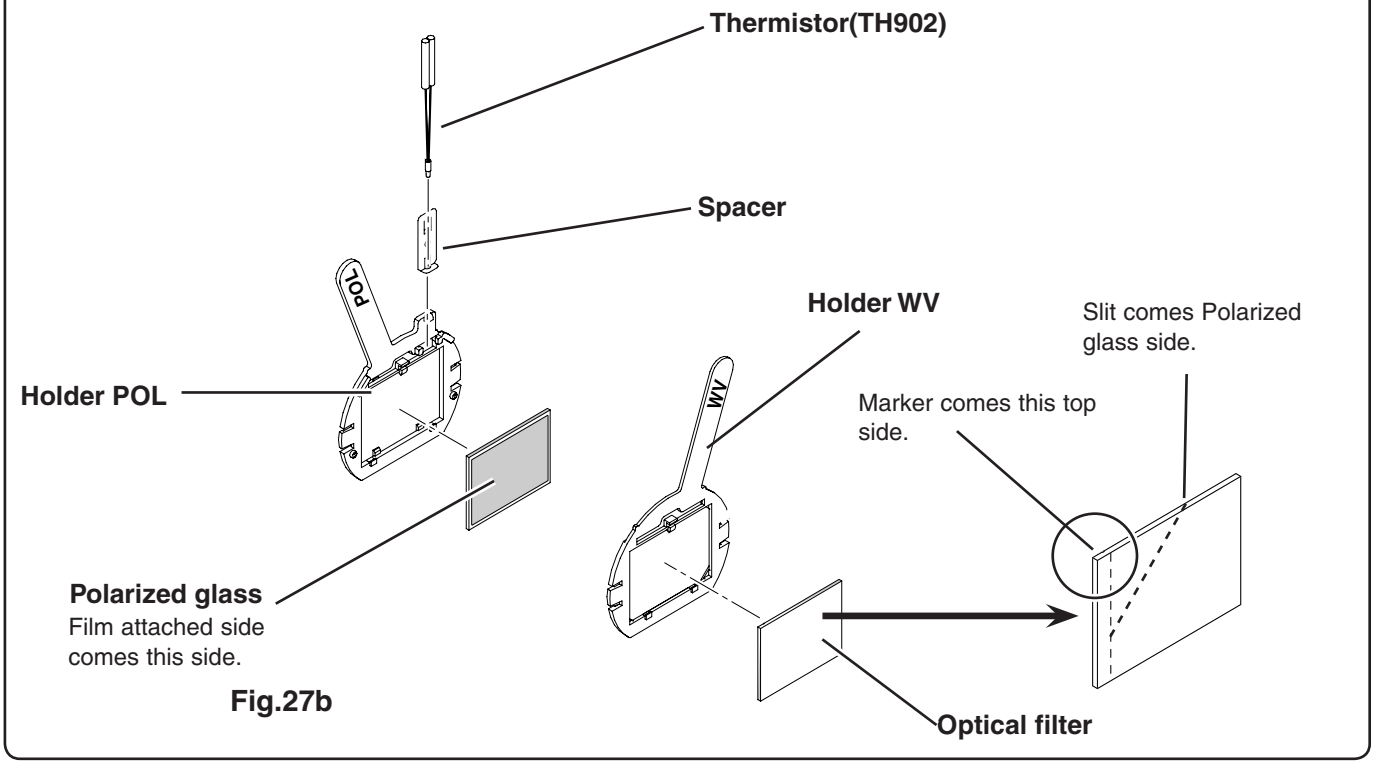


Fig.27b

* The optical filter must be used with the specified parts according to the mounted prism assembly type, Type-L or Type-R. See the parts list for further details.

28 Red Polarized glass ass'y and Optical filter ass'y removal.

1. Remove 1 screw-A(M2.5X6) and remove the stopper.
2. Remove the Polarized glass ass'y and remove the Optical filter ass'y ass'y.

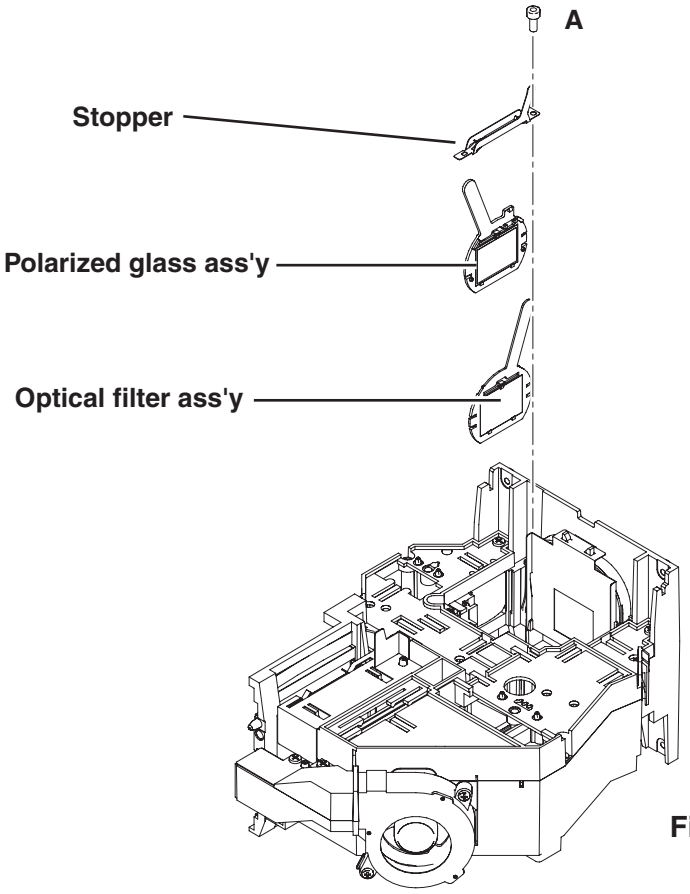


Fig.28a

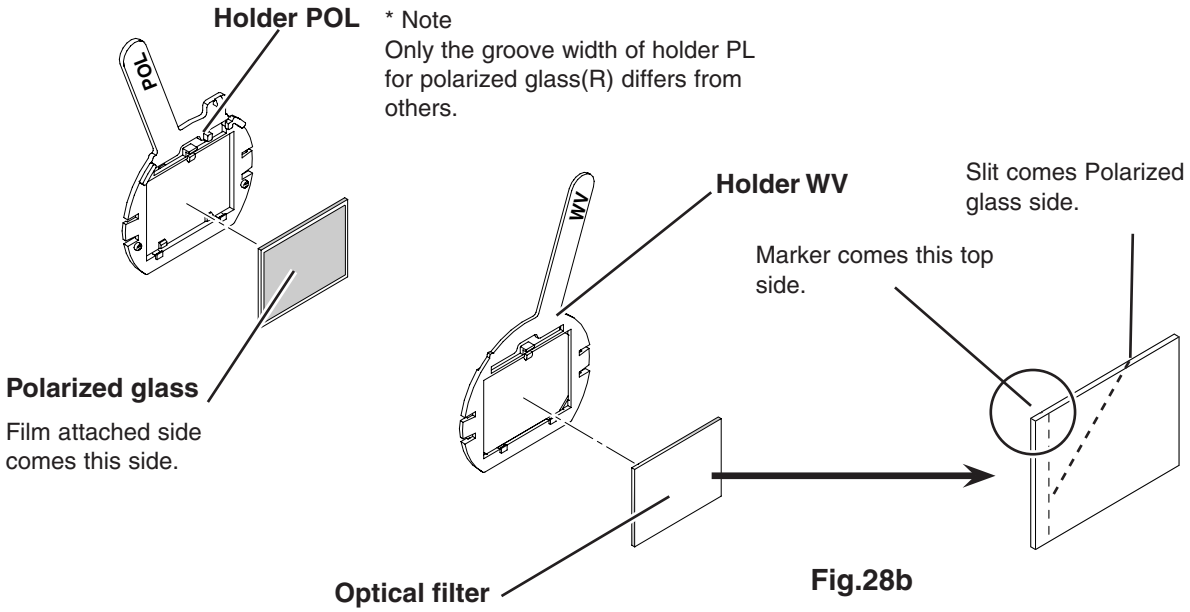
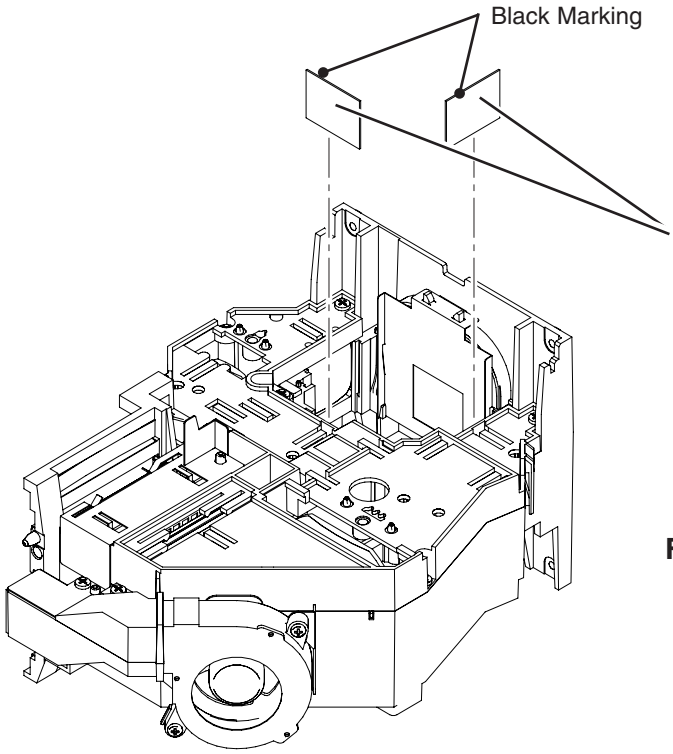


Fig.28b

* The optical filter must be used with the specified parts according to the mounted prism assembly type, Type-L or Type-R. See the parts list for further details.

29 Polarized glasses(GB) removal.

1. Remove the Polarized glasses(GB) upward.



Note on Polarized glass handling
When replacing the polarized glass(GB), you must ware the clean glove and do not touch the glass face. Mount them as the black marker comes top side as shown in the figure.

Fig.29

30-1 Optical base top removal-1.

1. Remove 2 screws-A(T3X10) and remove the Stopper lens.

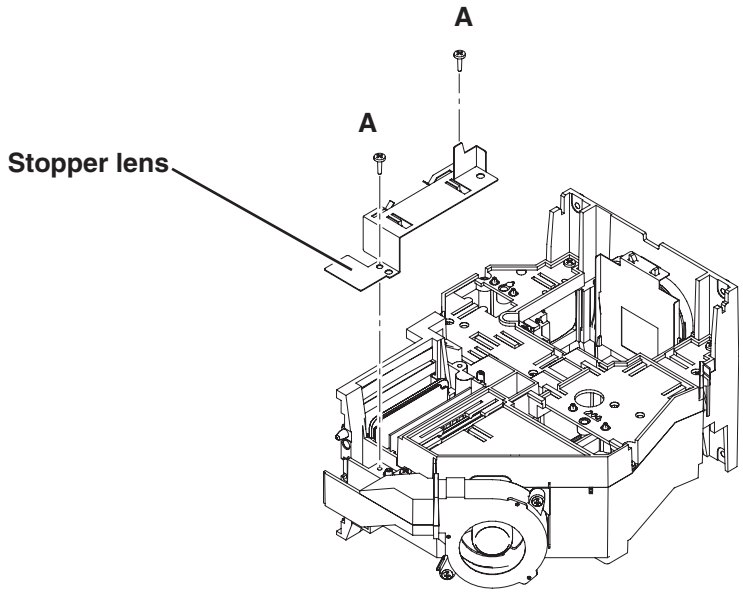


Fig.30-1

30-2 Optical base top removal-2.

1. Remove 3 screws-A(T3X10) and remove the optical base top.

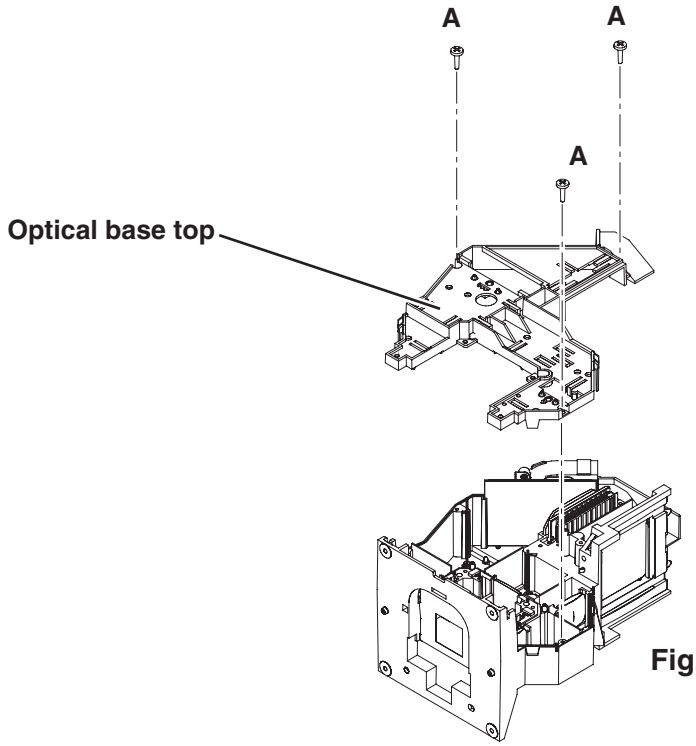


Fig.30-2

30-3 Optical base top removal-3.

1. Remove 2 screws-A(T3X10) and remove the Fan(FN903) ass'y.
2. Unhook 2 hooks and pull out the Shield plate.

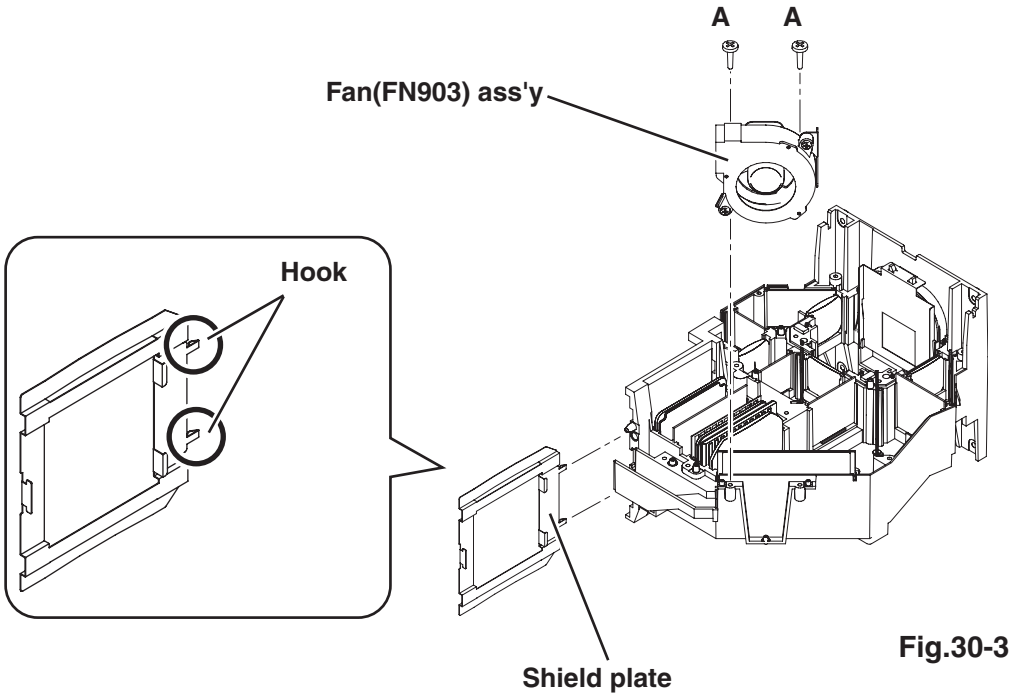


Fig.30-3

31 Fan(FN903) ass'y disassemblies.

1. Remove 2 screws-A(M3X8) and remove the Fan(Fn903).

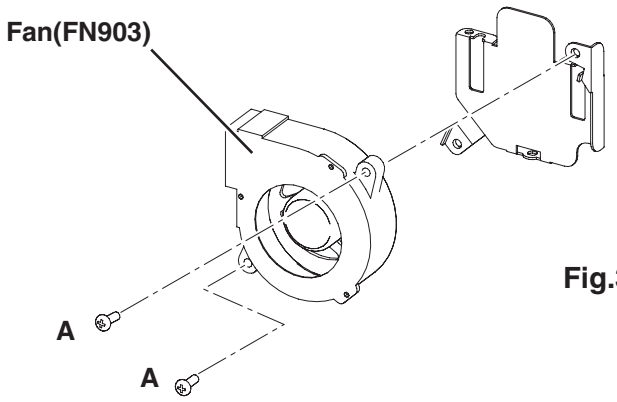
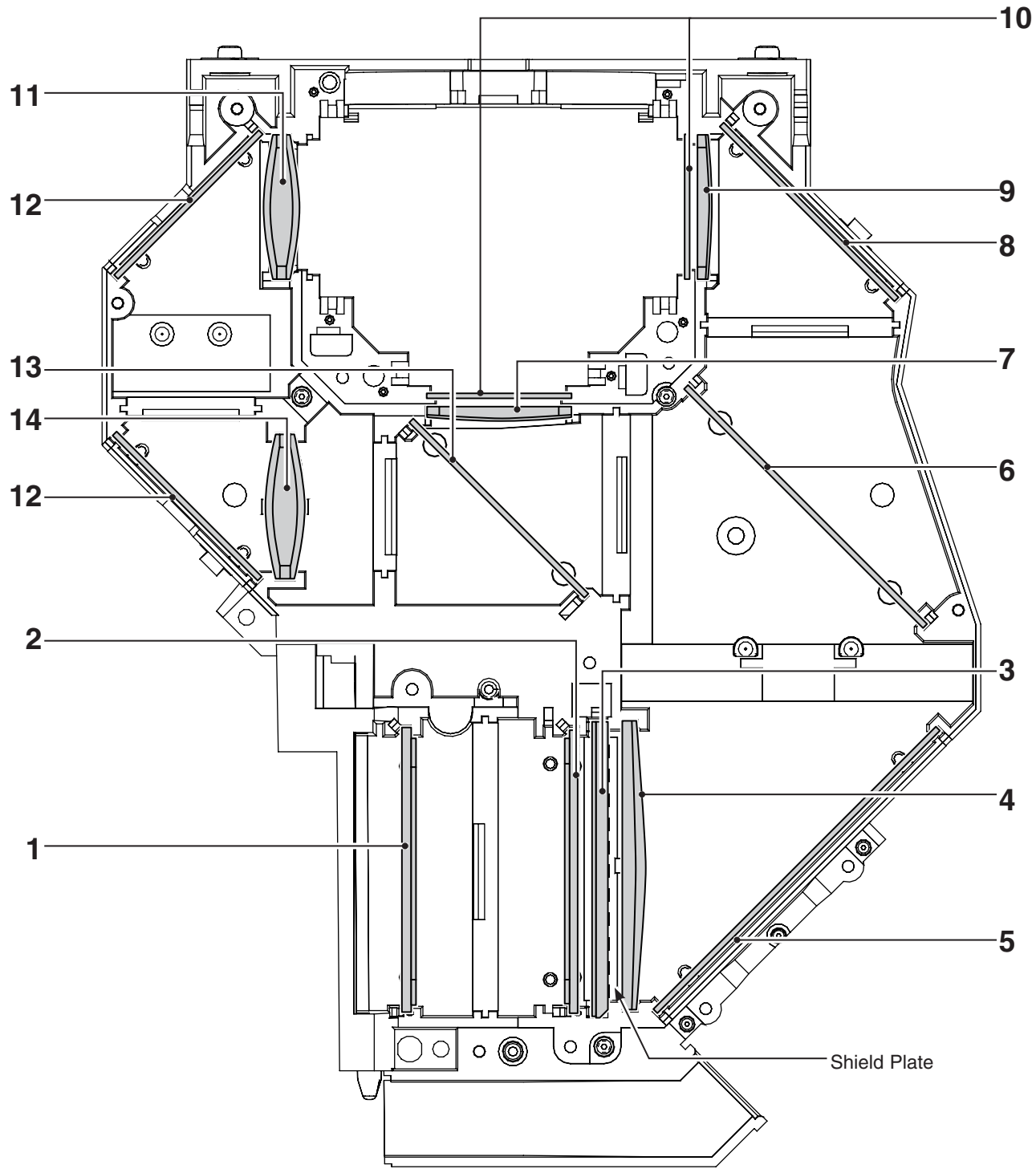
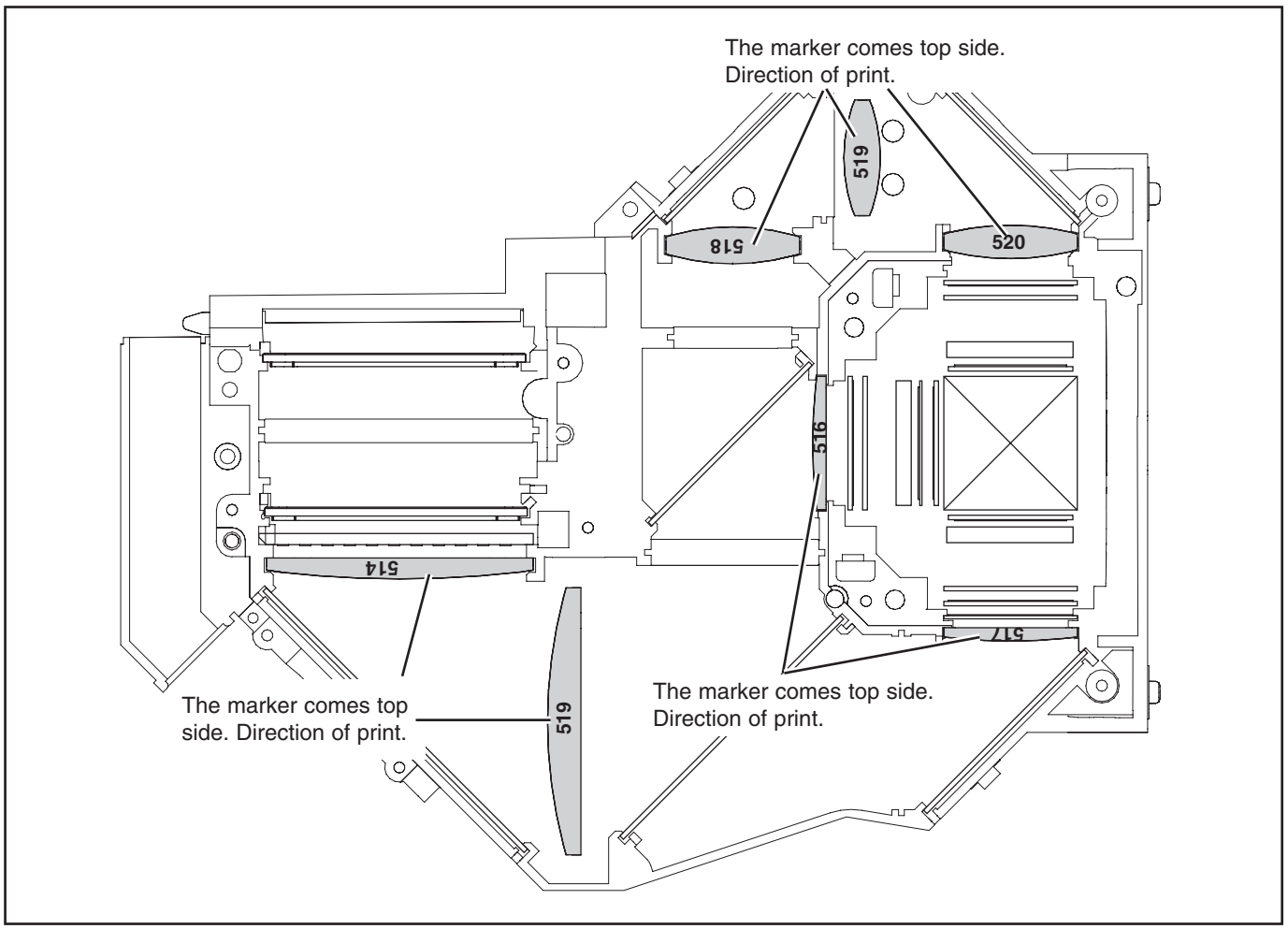


Fig.31

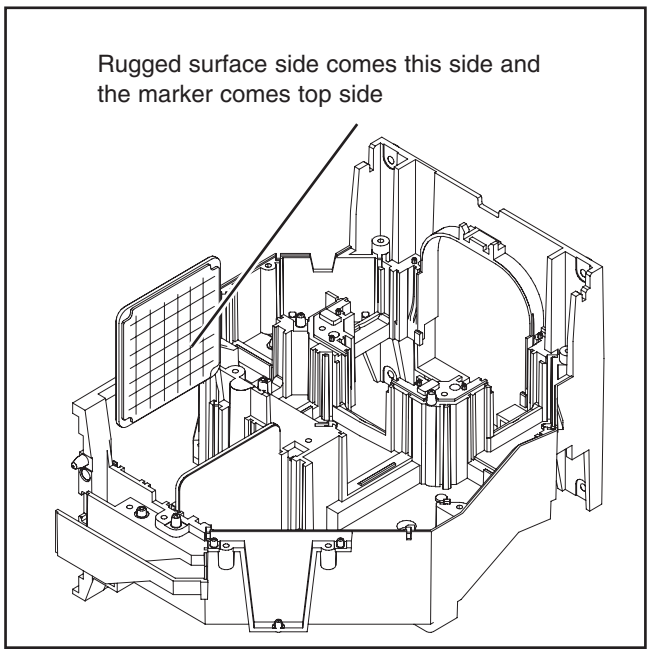
Optical parts locations and directions in the Optical Unit

No.	Parts Name	No.	Parts Name
1	LENS,INTEGRATOR(IN)	8	MIRROR(B)
2	LENS,INTEGRATOR(OUT)	9	LENS,CONDENSER(B)
3	ASSY,PRISM(PBS)	10	PREPOLARIZED GLASS(IN)
4	LENS,CONDENSER(IN)	11	LENS,CONDENSER(R)
5	MIRROR(W-COLD)	12	MIRROR(R)
6	DICHROIC MIRROR (B)	13	DICHROIC MIRROR (G)
7	LENS,CONDENSER(G)	14	LENS,RELAY(IN)

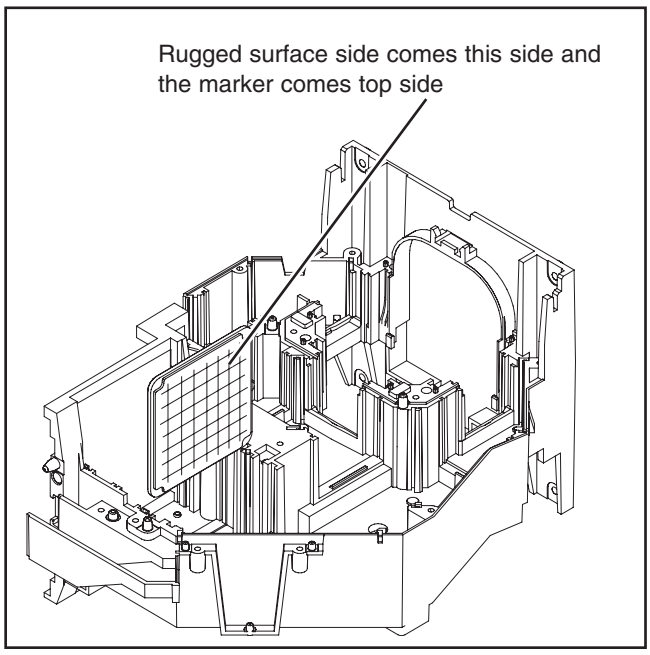


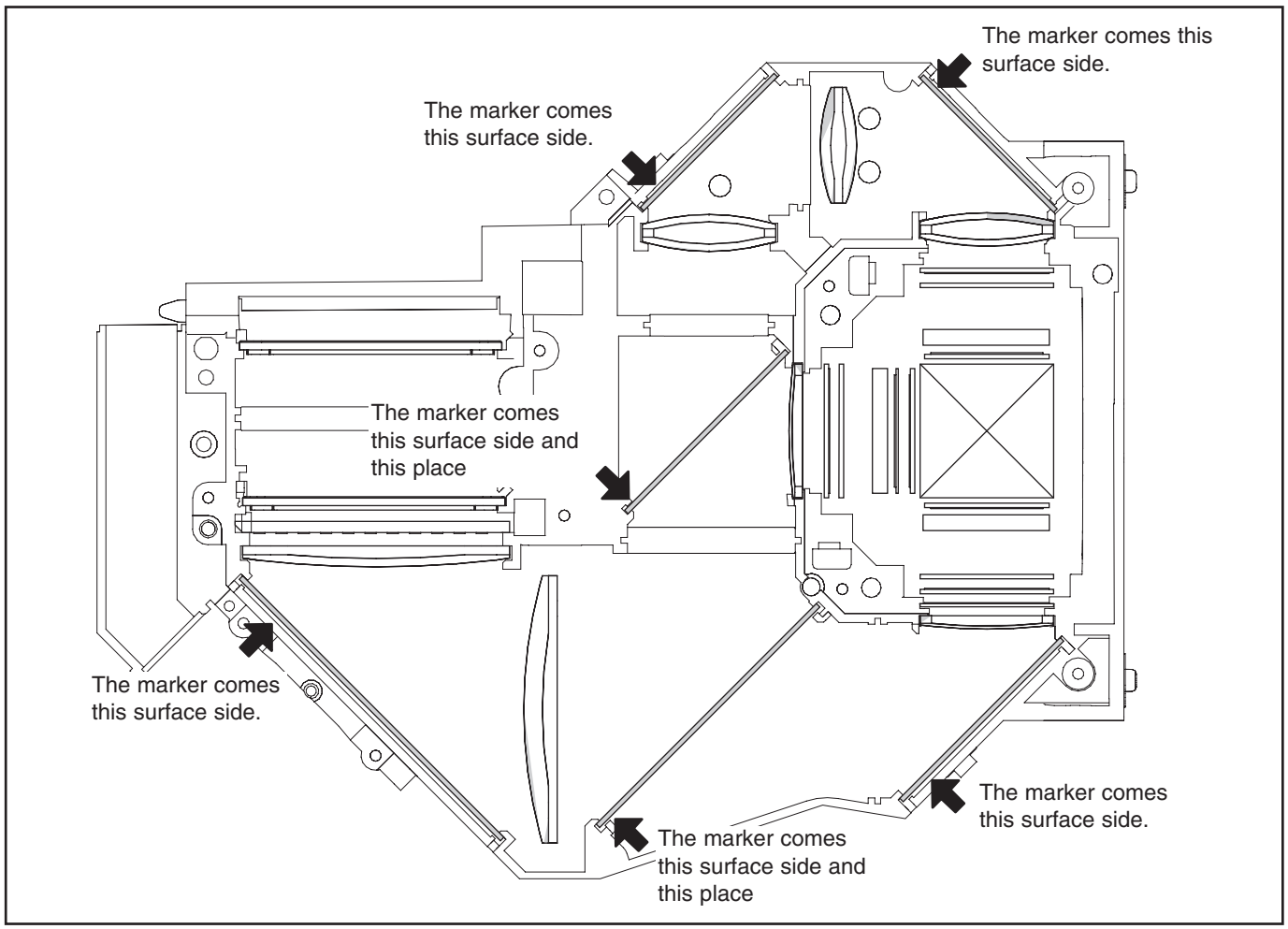


Integrator lens (IN)

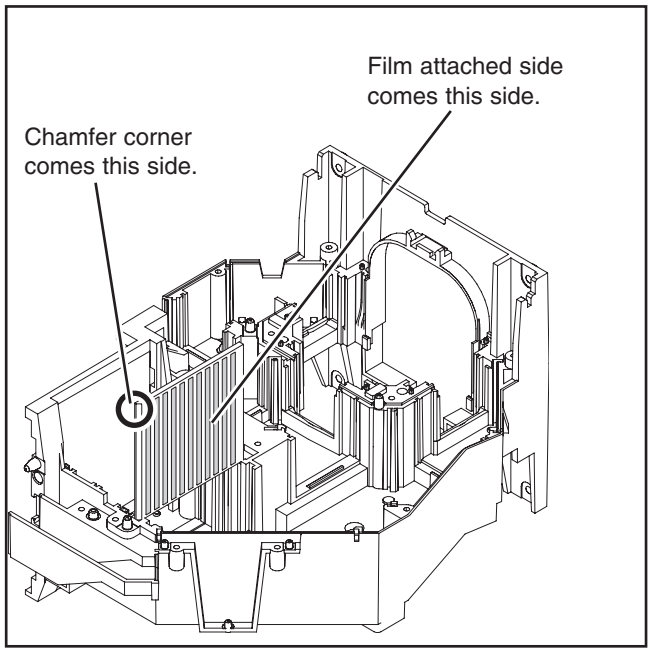


Integrator lens (OUT)




The marker comes this surface side.
The marker comes this surface side.
The marker comes this surface side and this place
The marker comes this surface side.
The marker comes this surface side.
The marker comes this surface side and this place

PBS


Film attached side comes this side.
Chamfer corner comes this side.

Adjustments

Adjustments after Parts Replacement

● : Adjustment necessary ❍ : Check necessary

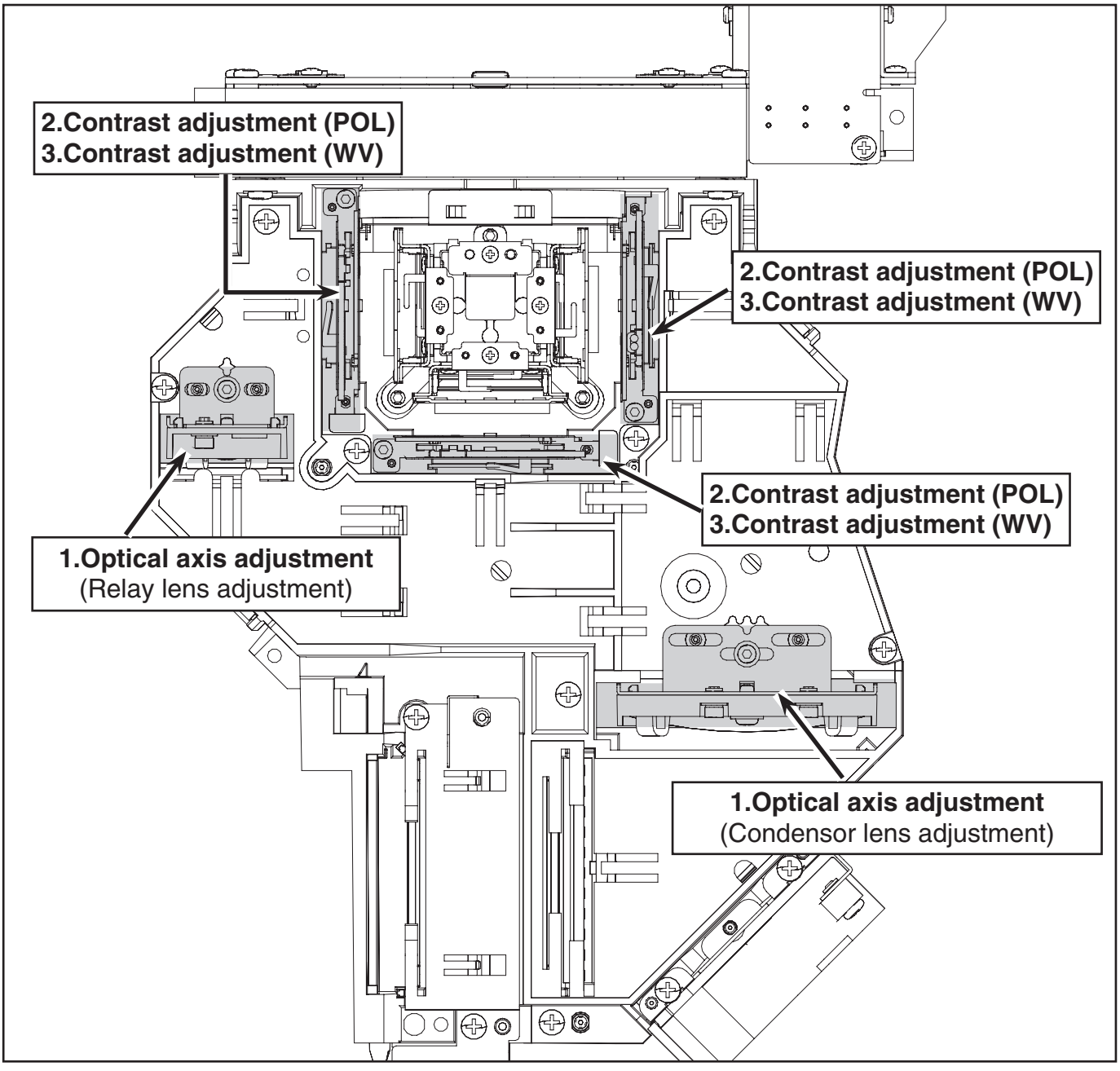
		Disassembly / Replaced Parts									
		LCD/ Prism Ass'y	Conden-sor Lens	Relay Lens (OUT)	Polarized Glass (POL)	Optical Filter (WV)	Integ-rator Lens	PBS	Power Board	Main Board	Fans
Optical Adjustment	Optical axies adjustment	●	●	●			●	●			
	Contrast adjustment (POL)	●			●						
	Contrast adjustment (WV)	●				●					
Electrical Adjustments	Fan control adjustment								●	●	●
	Panel type check and setting	●								●	
	PC-Auto calibration adjustment									●	
	Video-Auto calibration adjustment									●	
	480i-Auto calibration adjustment									●	
	Common center adjustment	❍								●	
	50% luminance adjustment [PC]									●	
	50% luminance adjustment [Video]									●	
	White balance adjustment [PC]	❍								●	
	White balance adjustment [Video]	❍								●	
	White uniformity adjustment	❍								❍	
	Filter calibration adjustment								●	●	●

Optical Adjustments

Before taking optical adjustments below, remove the Cabinet Top following to the "Mechanical Disassemblies".
Adjustments require a 2.0mm hex wrench, Philips Screwdriver and a slot screwdriver. When you adjust Integrator lens or Relay lens adjustment, you need to disconnect some connectors and FPC cables of LCD panels on the main board.
When adjusting optical component, adjust each adjustment item in numerical order. Incorrect adjustment steps may produce improper adjustment. The items adjusted correctly can be omitted from the steps.
Note: Do not disconnect connectors on the main board, because the projector can not turn on or operate properly for adjustment.

WARNING : USE UV RADIATION EYE AND SKIN PROTECTION DURING SERVICING

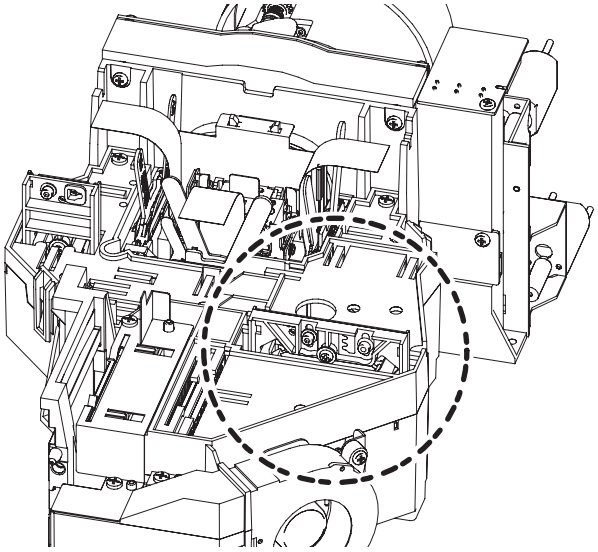
CAUTION: To prevent suffer of UV radiation, those adjustments must be completed within 25 minutes.



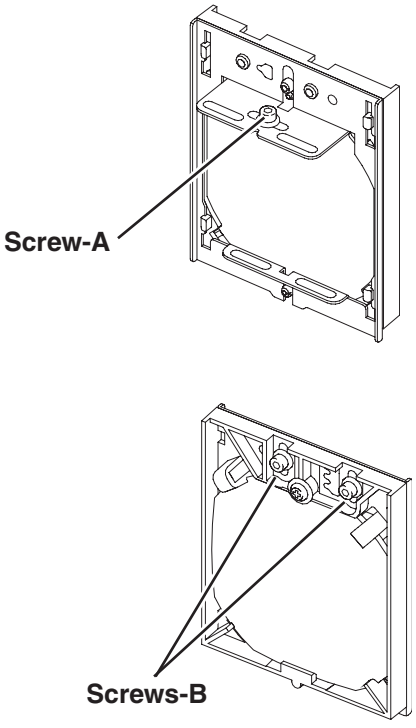
1. Optical axis adjustment

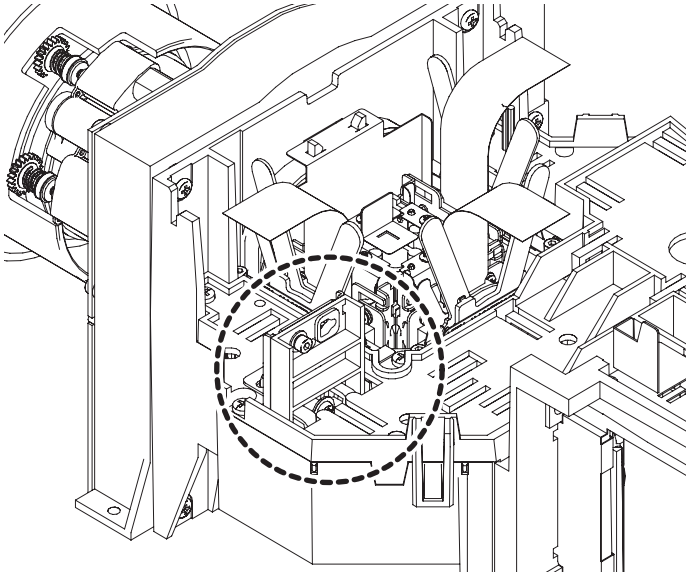
Before adjustment

1. Turn the projector on by a state of without FPC cables.
2. Condenser lens adjustment
   Loosen 1 screw A and 2 screws B.
3. Relay lens adjustment
   Loosen 1 screw C and 1 screw D.

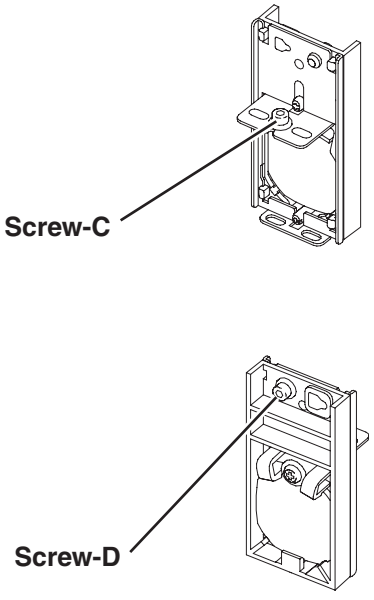


Condenser lens adjustment



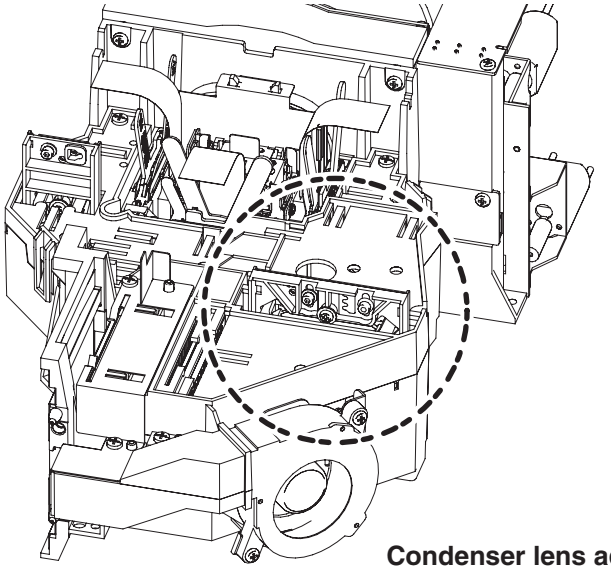


Relay lens adjustment

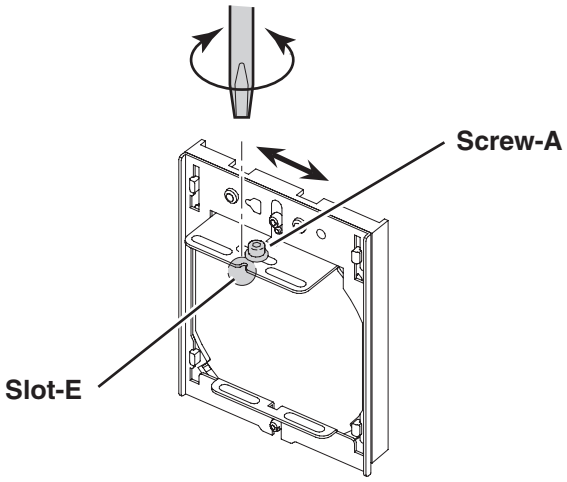


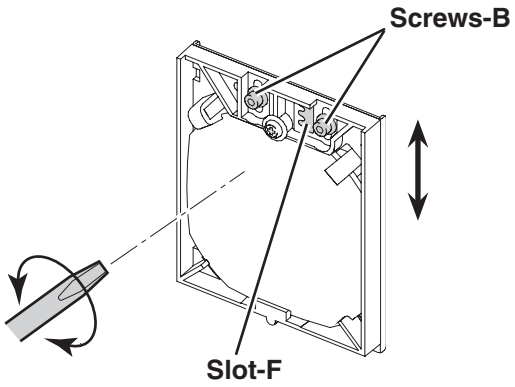
Condenser lens adjustment-1

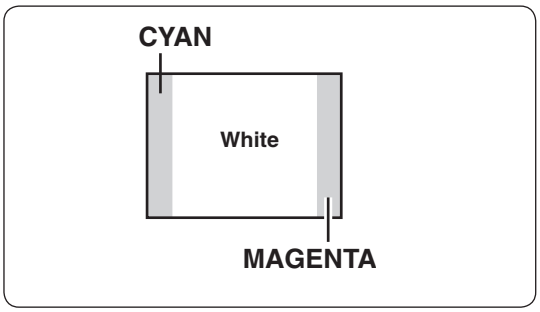
1. Adjust the slot E to make shading appears on the right and left(magenta and cyan) of the screen as shown in figure.
2. Adjust the slot F to make shading appears on the top and bottom(cyan and magenta) of the screen as shown in figure.

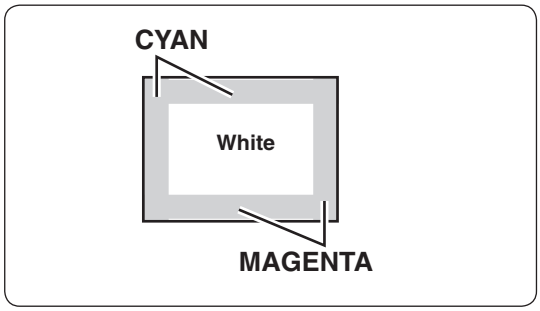


Condenser lens adjustment -1



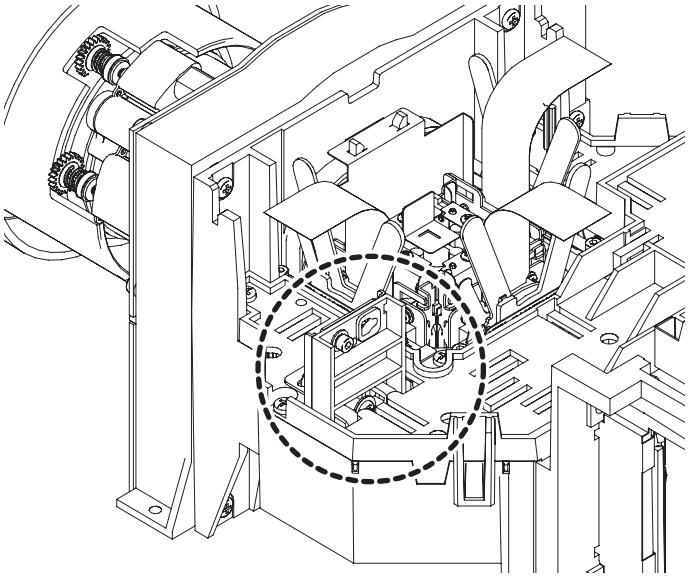


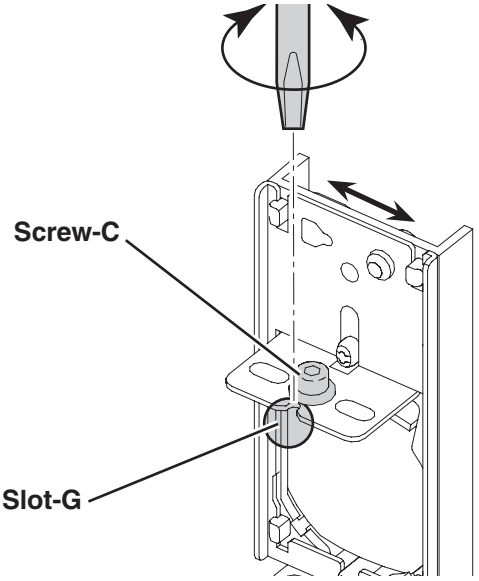


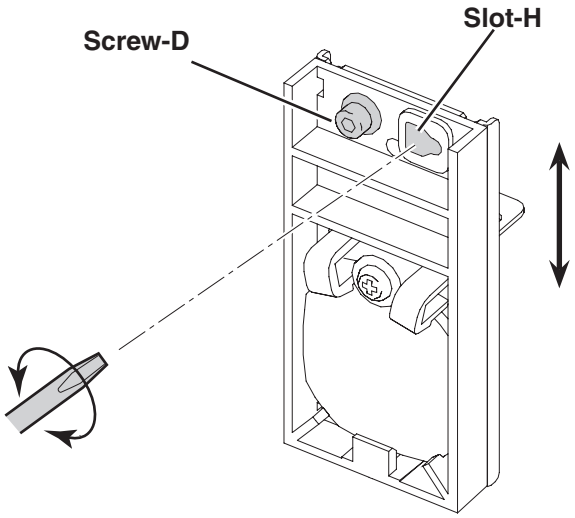


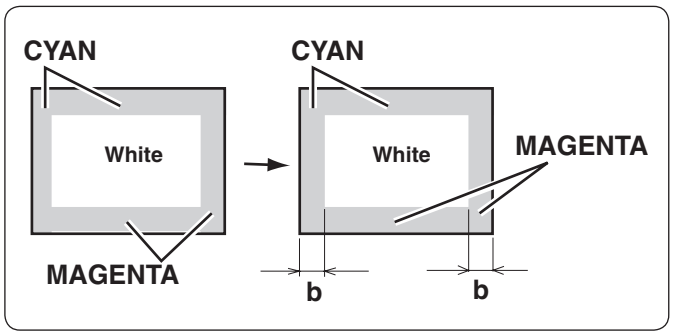
Relay lens adjustment

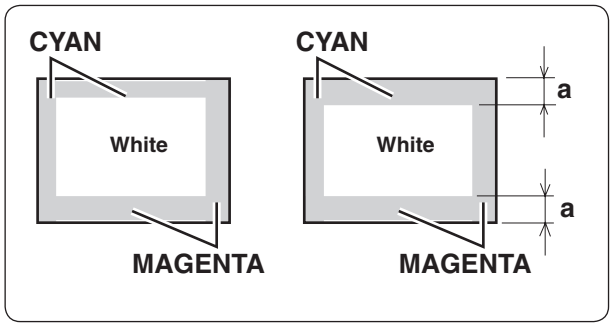
3. Adjust the slot G.
   It is adjusted that cyan and the magenta in the top and bottom part become the same width.
4. Adjust the slot H.
   It is adjusted that cyan and the magenta in the right and left part become the same width.
5. Tighten screw **C** and screw **D** to fix the relay lens unit.





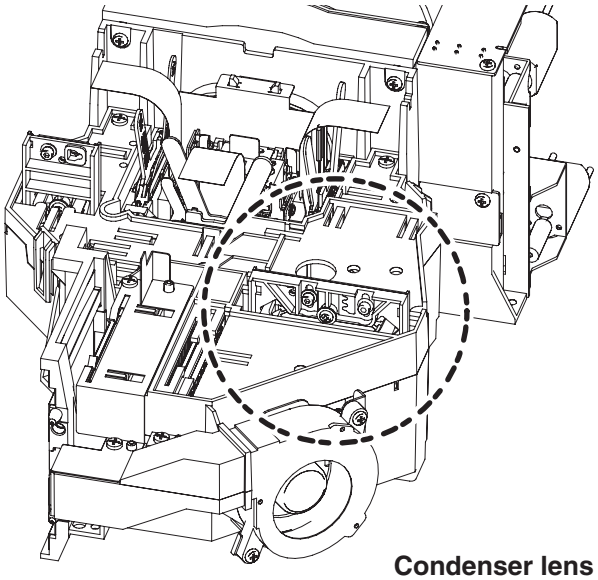




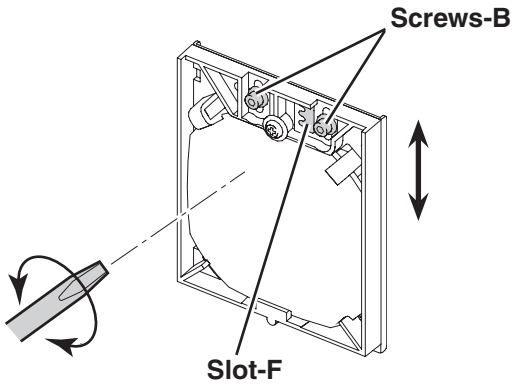


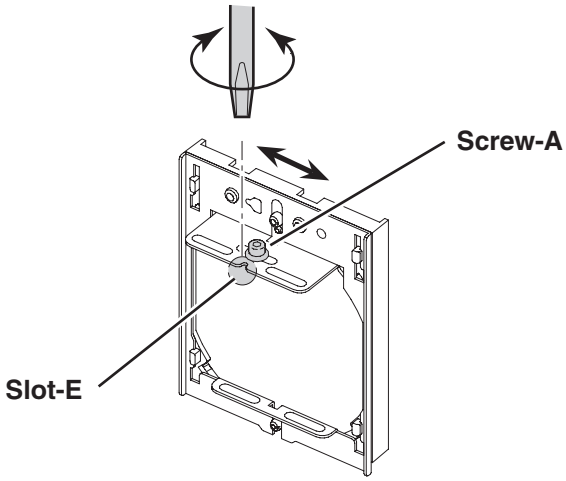
Condenser lens adjustment-2

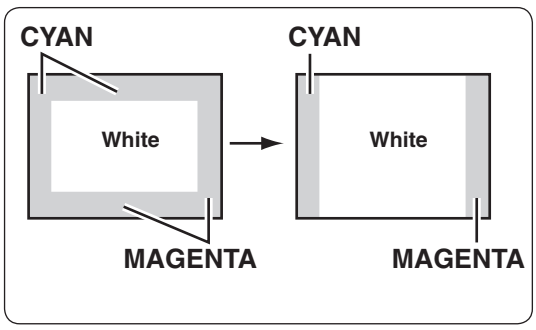
6. Adjust the slot F to make color uniformity in white by using a slot screwdriver.
   (Top and bottom shading are erased.)
7. Adjust the slots E to make color uniformity in white by using a slot screwdriver.
   (Right and left shading are erased.)
8. Tighten 1 screws **A** and 2 screws **B** to fix the integrator lens unit.

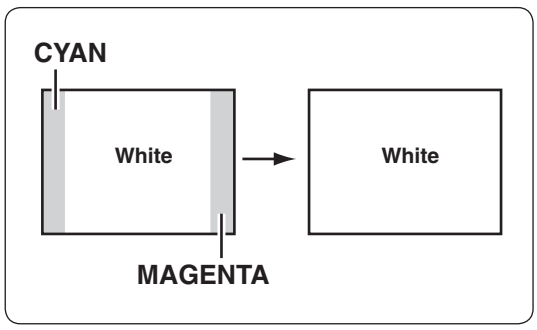


Condenser lens adjustment -1







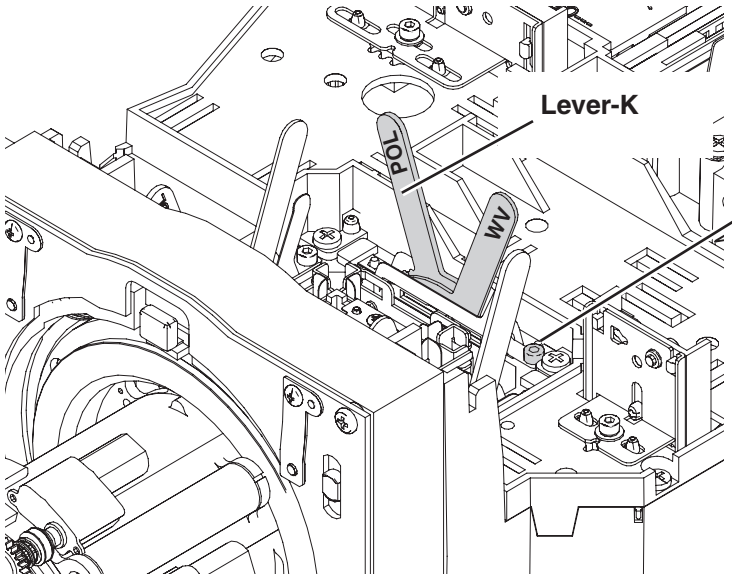


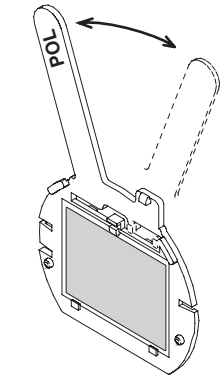
2. Contrast adjustment (POL)

[Before Adjustment]
- Input a 100% of black raster signal.

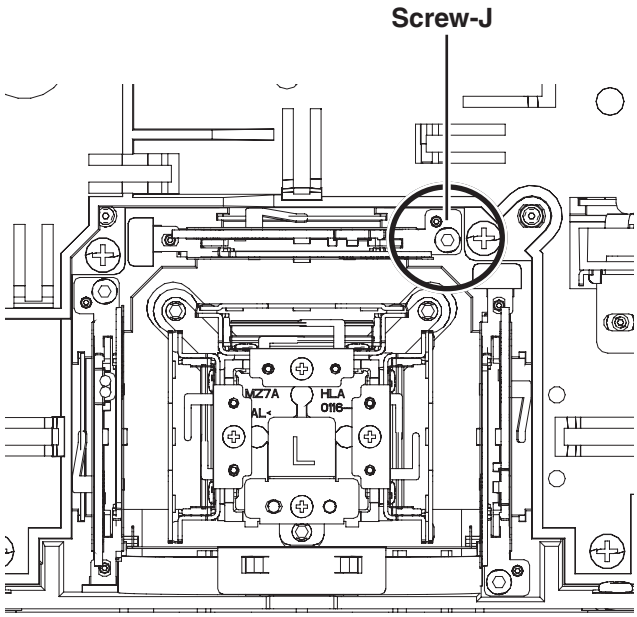
G-Contrast adjustment (POL)

1. Loosen a screw **J** on the stopper plate which you intend to adjust.
2. Adjust the lever **K** (POL) to obtain the darkest brightness on the screen.
   (This screw **J** is tightened later. this screw is tightend after Optical filter adjustment.)



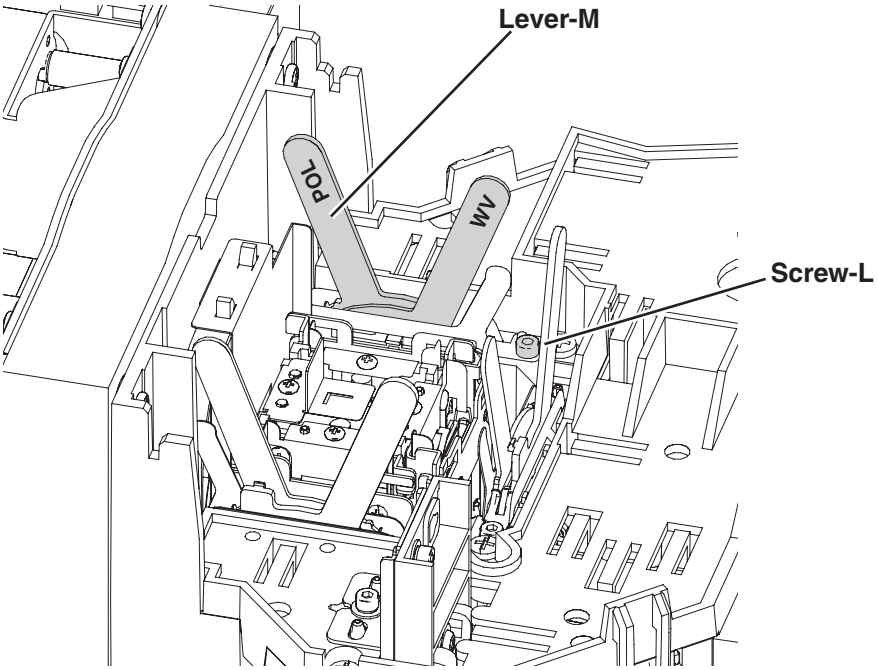


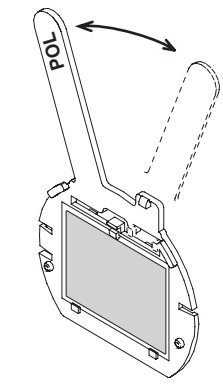
Polarized glass unit (Green)



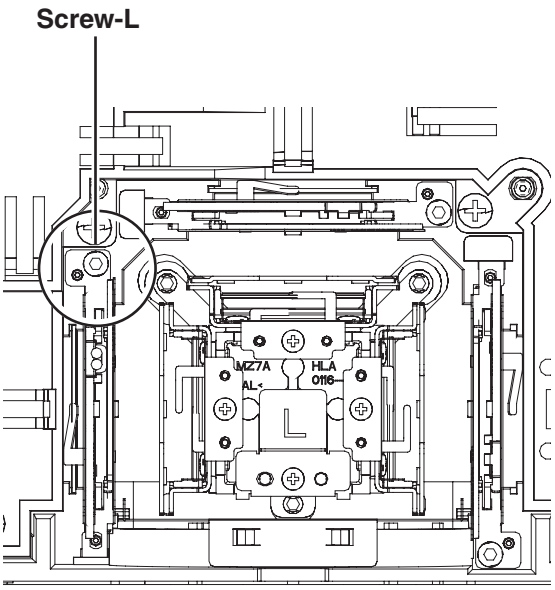
B-Contrast adjustment (POL)

1. Loosen a screw **L** on the stopper plate which you intend to adjust.
2. Adjust the lever **M** (POL) to obtain the darkest brightness on the screen.
   (This screw **L** is tightened later. this screw is tightend after Optical filter adjustment.)



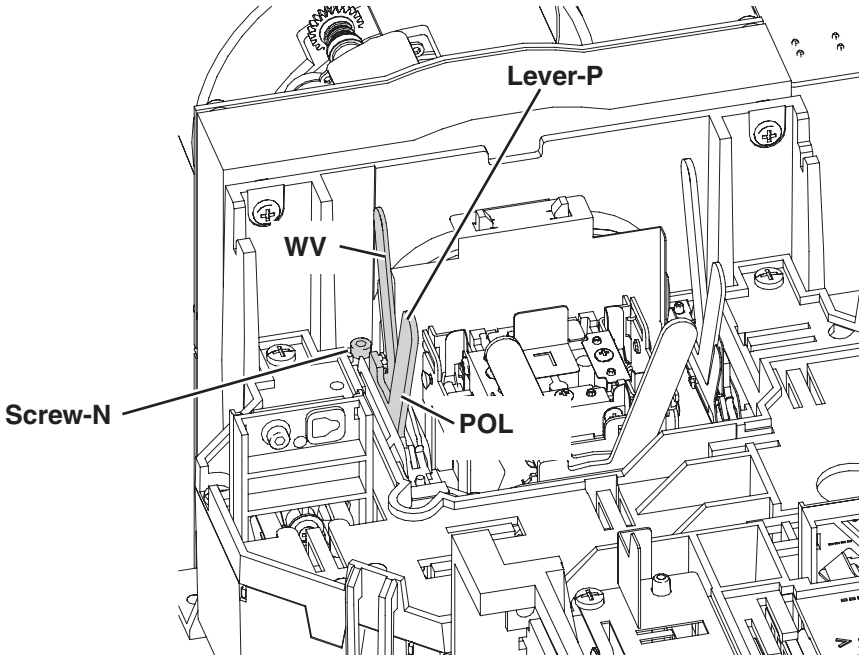


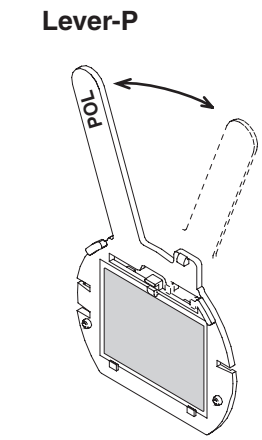
Polarized glass unit (Blue)



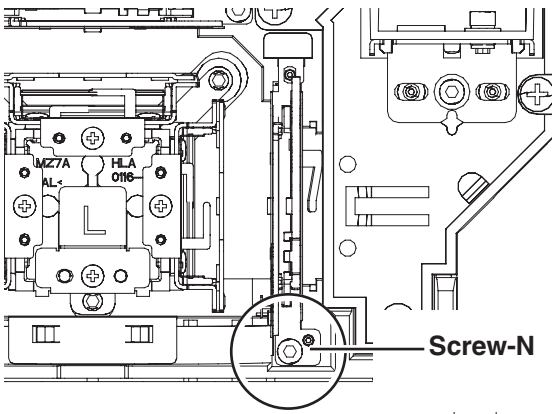
R-Contrast adjustment (POL)

1. Loosen a screw **N** on the stopper plate which you intend to adjust.
2. Adjust the lever **P** (POL) to obtain the darkest brightness on the screen.
(This screw **N** is tightened later. this screw is tightend after Optical filter adjustment.)





Polarized glass unit (Red)



3. Contrast adjustment (WV)

[Before Adjustment]
- Input a 100% of black raster signal.

G-Contrast adjustment (WV)

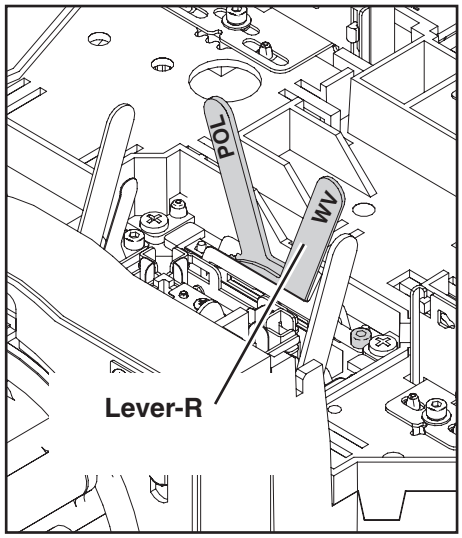
1. Adjust the lever **R** (WV) to obtain the darkest brightness on the screen.
2. Tighten the screw **J**.

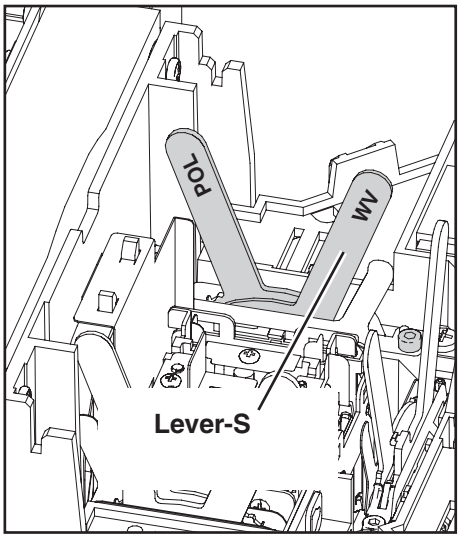
B-Contrast adjustment (WV)

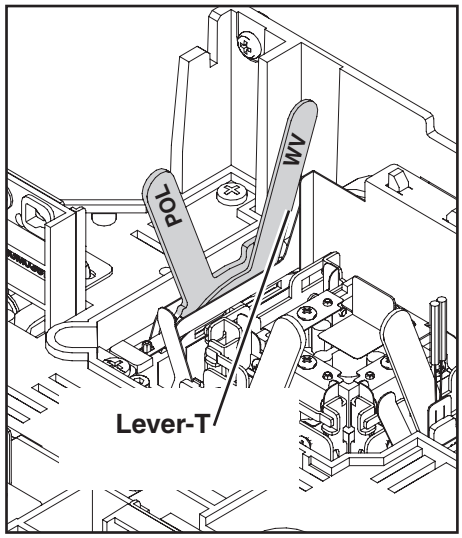
1. Adjust the lever **S** (WV) to obtain the darkest brightness on the screen.
2. Tighten the screw **L**.

R-Contrast adjustment (WV)

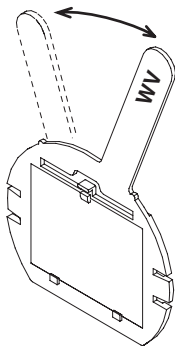
1. Adjust the lever **T** (WV) to obtain the darkest brightness on the screen.
2. Tighten the screw **N**.



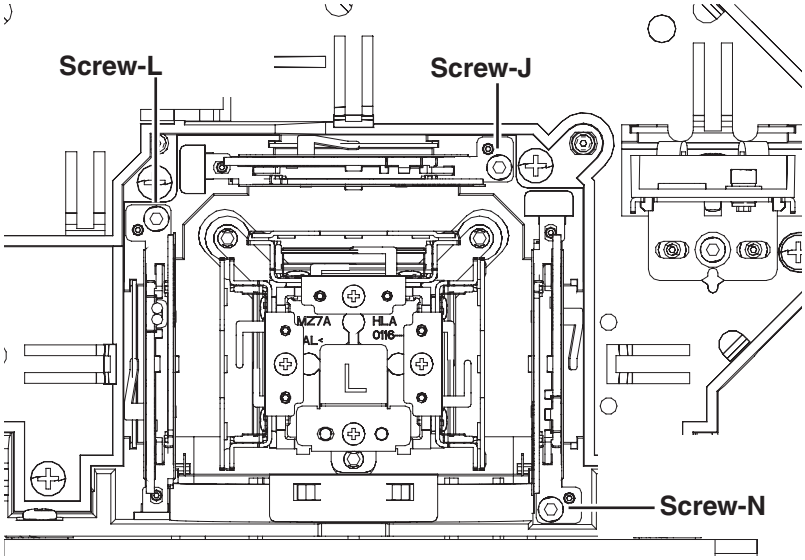




Lever-R, S, T



Optical filter unit (R, G, B)



Electrical Adjustments

Service Adjustment Menu Operation

To enter the service mode

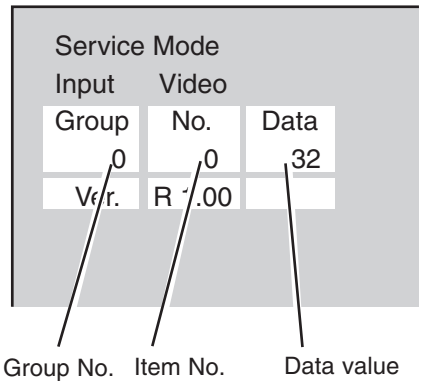
To enter the “Service Mode”, press and hold the **MENU** and **SELECT button** for more than 3 seconds. The service menu appears on the screen as follows.

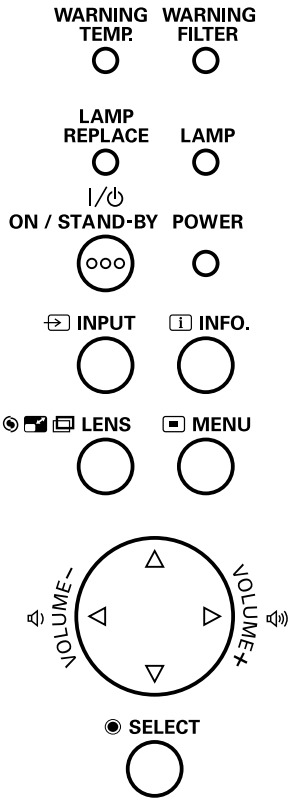
To adjust service data

Select the adjustment group no. by pressing the **MENU button** (increase) or **SELECT button** (decrease), and select the adjustment item no. by pressing the pointer ▲ or ▼ **button**, and change the data value by pressing the ◀ or ▶ **button**. Refer to the “Service Adjustment Data Table” for further description of adjustment group no., item no. and data value.

To exit the service mode

To exit the service mode, press the **ON/STAND-BY button**.





Memory IC (IC1391) Replacement

Memory IC on the main board stores the data for the service adjustments, and should not be replaced except for the case of defective device.
If replaced, the re-adjustments are required following to the “Electrical Adjustments”.
The data of lamp replacement counter is stored in the Memory IC.
Please note that the lamp replace counter will be reset when the memory IC is replaced.
(Lamp replace counter cannot be set to the previous value.)

● **Caution to memory IC replacement**

When memory IC is replaced with new one, the CPU writes down the default data of the service adjustments to the replaced IC as the mentioned on the service adjustment table. As these data are not the same data as factory shipped data, it should be required to perform the re-adjustments following to the “Electrical Adjustments”.
Please note that in this case the lamp replace counter will be reset.

● **Caution of Main Board replacement (in the case memory IC is not defective)**

When the main board is replaced, memory IC should be replaced with the one on previous main board. After replacement, it should be required to perform the re-adjustments following to the “Electrical Adjustments”.
In this case, the lamp replace counter can be kept the value as before.

Circuit Adjustments

CAUTION: The each circuit has been made by the fine adjustment at factory. Do not attempt to adjust the following adjustments except requiring the readjustments in servicing otherwise it may cause loss of performance and product safety.

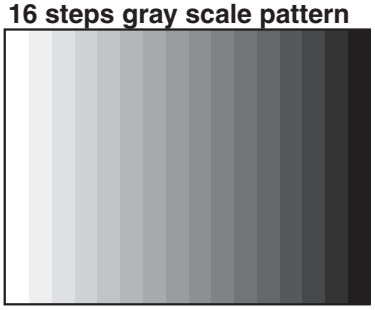
WARNING : USE UV RADIATION EYE AND SKIN PROTECTION DURING SERVICING.

CAUTION:
To prevent suffer of UV radiation, those adjustments must be completed within 25 minutes.

[Adjustment Condition]

- Input signal
  - Video signal .....1.0Vp-p/75Ω terminated, 16 steps gray scale (Composite video signal)
  - Computer signal.....0.7Vp-p/75Ω terminated, 16 steps gray scale pattern
  - Component Video signal.....0.7Vp-p/75Ω terminated, 16 steps gray scale pattern
- Picture control mode .....“STANDARD” mode unless otherwise noted.

16 steps gray scale pattern



Note:
* Please refer to “Service Adjustment Menu Operation” for entering the service mode and adjusting the service data.

1 Fan Voltages adjustment

1. Enter the service mode.
2. Connect a digital voltmeter to test point **A** (+) and chassis ground (-). (3 test points are provided for this adjustment, perform all the voltage adjustments in the table below.)
3. Select group no. “**250**”. Select item no. **B** and change data value to adjust the voltage to be **4.5** ± 0.05V.
4. Select group no. “**250**”. Select item no. **C** and change data value to adjust the voltage to be **13.8** ± 0.05V.
5. Repeat step 2 to 4 for the remaining test points in the table below.

Test Point A	Item No. B	Item No. C
K66D-1	0	1
K66E-1	2	3
K66F-1	4	5

2 Panel Type Check and Setting

* Before setting, you need to check which type of LCD panel is placed on the projector according to the item "LCD Panel/Prism Ass'y removal" in the chapter "Optical Parts Disassembly".

1. Enter the service mode.
2. Panel Type Check
   Select group no. “**290**”, item no. “**0**”. Check the data value as follows;
   Data value: 0 For L-Type of LCD Panel
   Data value: 20 For R-Type of LCD panel
3. Panel Type Setting
   Select group no. “**290**”, item no. “**1**” and change data value from 10 to 0 or 20 depending on your LCD Panel type. When the data value reaches 0 or 20, it returns to 10 quickly. The gamma-characteristics changes according to your selection.

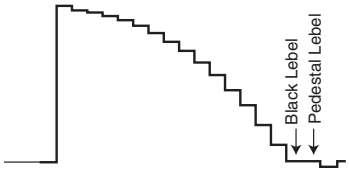
Note:
Be careful to take this adjustment. The value of gamma adjustment data will be reset and cannot be restored if you change the mode of LCD panel type.

3 PC-Auto Calibration adjustment

1. Enter the service mode.
2. Receive the 16-step grey scale computer signal with **Input1 [RGB]** mode.
3. To start the auto-calibration for PC adjustment, select group no. "**260**", item no. "**0**" and then change data value from "**0**" to "**1**". After the auto-calibration completed, "OK" will appear on the screen.

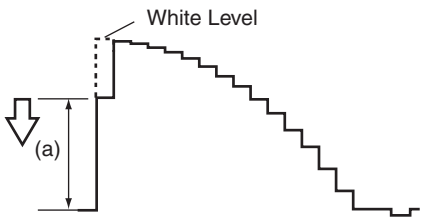
3 PC-Pedestal adjustment

1. Enter the service mode.
2. Receive the 16-step grey scale computer signal with **Input1 [RGB]** mode.
3. Connect an oscilloscope to test point "**TP35G**" (+) and chassis ground (-).
4. Select group no. "**0**", item no. "**0**" and change data value to adjust the pedestal level and black level to be the same level.
5. Connect an oscilloscope to test point "**TP35R**" (+) and chassis ground (-).
6. Select item no. "**1**" and change data value to adjust the pedestal level and black level to be the same level.
7. Connect an oscilloscope to test point "**TP35B**" (+) and chassis ground (-).
8. Select item no. "**2**" and change data value to adjust the pedestal level and black level to be the same level.



3 PC-Gain adjustment

1. Enter the service mode.
2. Receive the 16-step grey scale computer signal with **Input1 [RGB]** mode.
3. Connect an oscilloscope to test point "**TP35G**" (+) and chassis ground (-).
4. Select group no. "**0**", item no. "**3**" and adjust the amplitude "**a**" to be minimum by changing the Data value.
5. Connect an oscilloscope to test point "**TP35R**" (+) and chassis ground (-).
6. Select group no. "**0**", item no. "**4**" and adjust the amplitude "**a**" to be minimum by changing the Data value.
7. Connect an oscilloscope to test point "**TP35B**" (+) and chassis ground (-).
8. Select group no. "**0**", item no. "**5**" and adjust the amplitude "**a**" to be minimum by changing the Data value.



4 Video-Auto Calibration adjustment

1. Enter the service mode.
2. Receive the 16-step grey scale composite video signal with **Input3 [Video]** mode.
3. To start the auto-calibration for Video adjustment, select group no. "**260**", item no. "**0**" and then change data value from "**0**" to "**1**". After the auto-calibration completed, "OK" will appear on the screen.

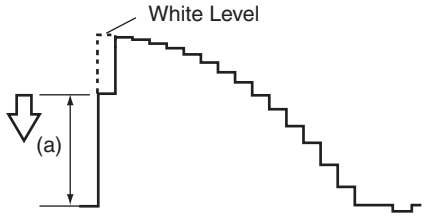
5 480i-Auto Calibration adjustment

1. Enter the service mode.
2. Receive the 16-step grey scale 480i-component video signal with **Input2 [Component]** mode.
3. To start the auto-calibration for 480i-component adjustment, select group no. "**260**", item no. "**0**" and then change data value from "**0**" to "**1**". After the auto-calibration completed, "OK" will appear on the screen.

Perform these manual adjustments instead of the Auto-Calibration adjustment from [3] to [5] when the auto-calibration is failed.

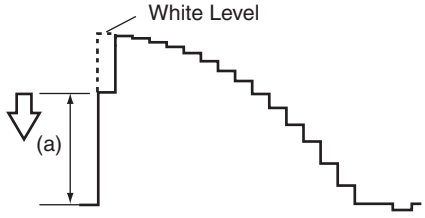
4 Video-Gain adjustment

1. Enter the service mode.
2. Receive the 16-step grey scale composite video signal with **Input3 [Video]** mode.
3. Connect an oscilloscope to test point "**TP35G**" (+) and chassis ground (-).
4. Select group no. "**20**", item no. "**2**" and adjust the amplitude "**a**" to be minimum by changing the Data value.



5 480i-Gain adjustment

1. Enter the service mode.
2. Receive the 16-step grey scale 480i-component video signal with **Input2 [Component]** mode.
3. Connect an oscilloscope to test point "**TP35G**" (+) and chassis ground (-).
4. Select group no. "**20**", item no. "**0**" and adjust the amplitude "**a**" to be minimum by changing the Data value.

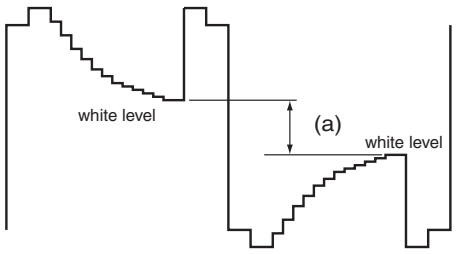


6 Common Center adjustment

1. Receive the 50%-Whole Gray computer signal with **Input1 [RGB]** mode.
2. Enter the service mode.
3. Select group no. "**100**", item no. "**92**" and change data value to "**2**" to reduce the panel frequency.
4. Project only red light component to the screen.
5. Select group no. "**101**", item no. "**0**" and change data value to obtain the minimum flicker on the screen.
6. Project only green light component to the screen.
7. Select item no. "**1**" and change data value to obtain the minimum flicker on the screen.
8. Project only blue light component to the screen.
9. Select item no. "**2** and change data value to obtain the minimum flicker on the screen.
10. Select group no. "**100**", item no. "**92**" and change data value to "**0**" to reset the panel frequency.

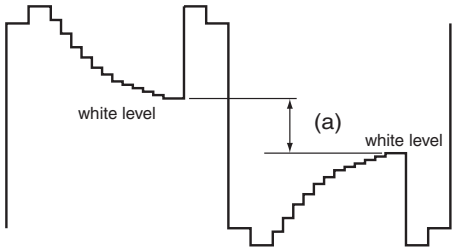
7 50% luminance adjustment [PC]

1. Receive the 16-step grey scale computer signal with **Computer1 [RGB]** mode.
2. Enter the service mode.
3. Connect an oscilloscope to test point "**TP35G**" (+) and chassis ground (-).
4. Select group no. "**100**", item no. "**6**" and change data value to adjust amplitude "**a**" to be **1.1 ±0.1V**.



8 50% luminance adjustment [Video]

1. Receive the 100%whole-white composite video signal with **Input3 [Video]** mode.
2. Enter the service mode.
3. Connect an oscilloscope to test point "**TP35G**" (+) and chassis ground (-).
4. Select group no. "**100**", item no. "**6**" and change data value to adjust amplitude "**a**" to be **2.2 ±0.1V**.



9 White Balance adjustment [PC]

1. Receive the 16-step gray scale computer signal with **Computer1 [RGB]** mode.
2. Enter the service mode, select group no. "**100**" item no. "**7**" (Red) or "**8**" (Blue), and change Data values respectively to make a proper white balance.

Confirm that the same white balance is obtained in video and computer input.

10 White Balance adjustment [Video]

1. Receive the 16-step grey scale composite video signal with **Video** mode.
2. Enter the service mode, select group no. "**100**" item no. "**7**" (Red) or "**8**" (Blue), and change Data values respectively to make a proper white balance.

Confirm that the same white balance is obtained in video and computer input.

11 White Uniformity Adjustment

If you find the color shading on the screen, please adjust the white uniformity by using the proper computer and "Color Shading Correction" software supplied separately.

The software can be ordered as follows;

COLOR SHADING CORRECTION Ver. 4.00	
Service Parts No.	645 075 9611

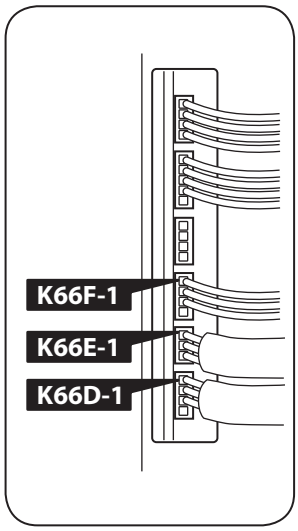
12 Filter Calibration adjustment

1. Enter the service mode, select group no. "**251**" and item no. "**0**" .
2. To start the adjustment, change data value from "**0**" to "**1**". After the auto-calbration completed, "OK" will appear on the screen.

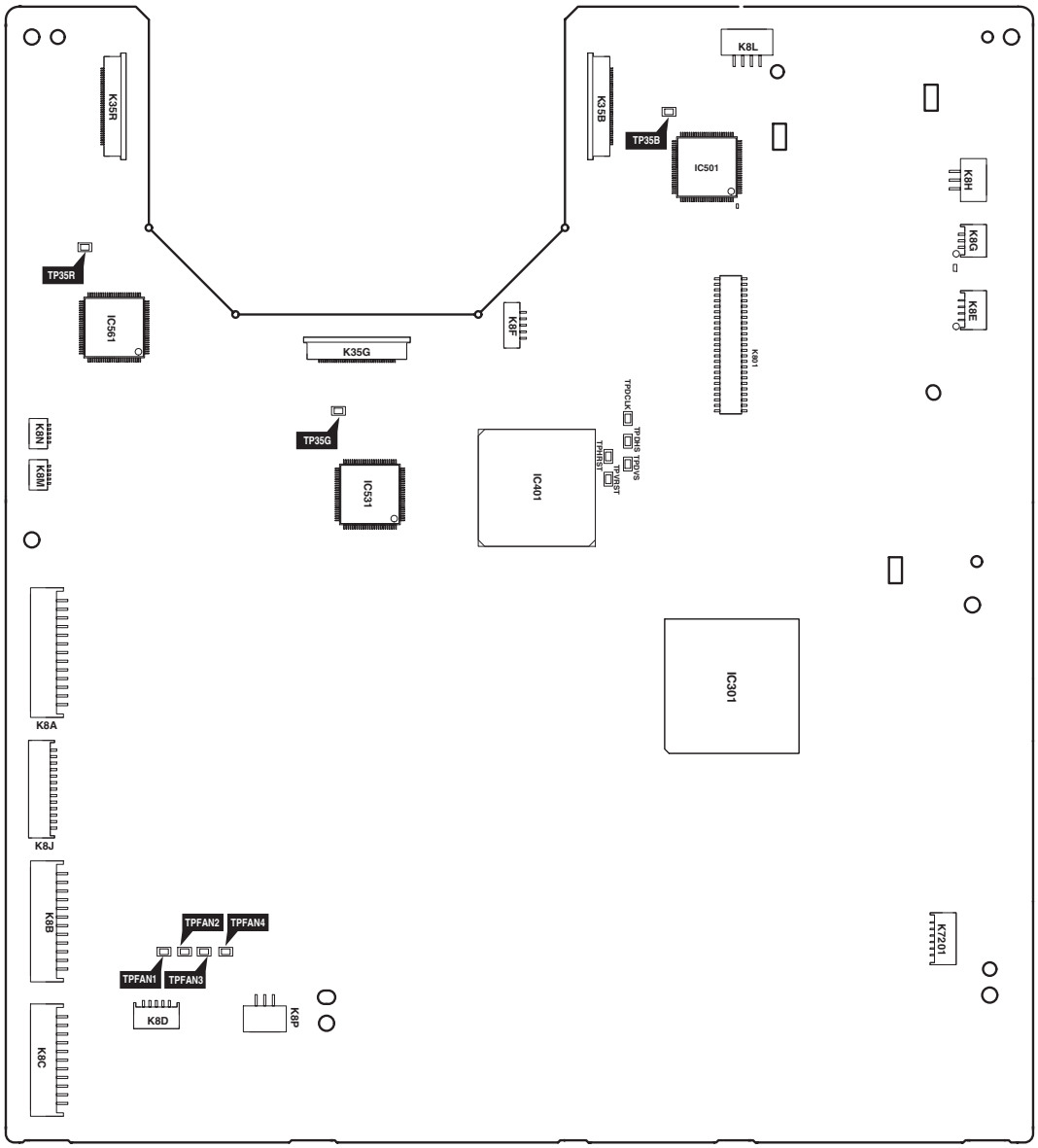
IMPORTANT
Before taking this adjustment, you need to replace the air filter with new one or clean up it and make sure the filter is securely installed.

Test Points and Locations

Top view around
POWER(DC) board



MAIN BOARD



Service Adjustment Data Table

These initial values are the reference data written from the CPU ROM to memory IC when replaced new memory IC. The adjustment items indicated with "*" are required to readjust following to the "Electrical adjustments". Other items should be used with the initial data value.

Group/ Item	Item Name	Function	Initial	Range	Note
Group 0	**AD Converter (PW190)**				
0	ADC G-OFFSET	PC	128	0 - 255	* G-Pedestal Adjustment
1	ADC R-OFFSET	PC	128	0 - 255	* R-Pedestal Adjustment
2	ADC B-OFFSET	PC	128	0 - 255	* B-Pedestal Adjustment
3	ADC G-GAIN	PC	50	0 - 255	* Gain Adjustment [PC]
4	ADC R-GAIN	PC	40	0 - 255	* Gain Adjustment [PC]
5	ADC B-GAIN	PC	40	0 - 255	* Gain Adjustment [PC]
6	GRAAFLTR/RBAAFLTR	Green (Red and Blue) Anti-Alias Filter	4 / R / R	0 - 7	
7	GRNAADWNSMPL / RBAADWNSMPL	Green (Red and Blue) Anti-Alias Downsample	0 / R / R	0 - 3	Composite & S-Video / Component / PC *R: Read only value
8	GRNAAHF / RBAAHF	Green (Red and Blue) Anti-Alias High Frequency	3 / R / R	0 - 3	
10	SOGTH	PC SyncOn Green Threhould	4	0 - 15	
11	SOGHYSDIS	PC Sync On Green Hsysterisis Enable	0	0 - 1	
12	HS1TH		4	0 - 7	
13	HS0TH		4	0 - 7	
100	PreCoast PC Signal		3	0 - 63	
101	PostCoast PC Signal		8	0 - 63	
120	PreCoast PC Video 480i		7	0 - 63	
121	PostCoast PC Video 480i		13	0 - 63	
122	PreCoast PC Video 575i		7	0 - 63	
123	PostCoast PC Video 575i		13	0 - 63	
124	PreCoast PC Video 480p		7	0 - 63	
125	PostCoast PC Video 480p		13	0 - 63	
126	PreCoast PC Video 575p		7	0 - 63	
127	PostCoast PC Video 575p		13	0 - 63	
128	PreCoast PC Video 720p 60Hz		7	0 - 63	
129	PostCoast PC Video 720p 60Hz		13	0 - 63	
130	PreCoast PC Video 720p 50Hz		7	0 - 63	
131	PostCoast PC Video 720p 50Hz		13	0 - 63	
132	PreCoast PC Video 1080i 60Hz		7	0 - 63	
133	PostCoast PC Video 1080i 60Hz		13	0 - 63	
134	PreCoast PC Video 1080i 50Hz		7	0 - 63	
135	PostCoast PC Video 1080i 50Hz		13	0 - 63	
136	PreCoast PC Video 1035i		7	0 - 63	
137	PostCoast PC Video 1035i		13	0 - 63	
138	PreCoast PC Video 1080p 60Hz		7	0 - 63	
139	PostCoast PC Video 1080p 60Hz		13	0 - 63	
140	PreCoast PC Video 1080p 50Hz		7	0 - 63	
141	PostCoast PC Video 1080p 50Hz		13	0 - 63	
142	PreCoast PC Video 1080p 30Hz		7	0 - 63	
143	PostCoast PC Video 1080p 30Hz		13	0 - 63	
144	PreCoast PC Video 1080p 25Hz		7	0 - 63	
145	PostCoast PC Video 1080p 25Hz		13	0 - 63	
146	PreCoast PC Video 1080p 24Hz		7	0 - 63	
147	PostCoast PC Video 1080p 24Hz		13	0 - 63	
150	PreCoast YCbCr 480i		7	0 - 63	
151	PostCoast YCbCr 480i		13	0 - 63	
152	PreCoast YCbCr 575i		7	0 - 63	
153	PostCoast YCbCr 575i		13	0 - 63	
154	PreCoast YCbCr 480p		7	0 - 63	
155	PostCoast YCbCr 480p		13	0 - 63	
156	PreCoast YCbCr 575p		7	0 - 63	
157	PostCoast YCbCr 575p		13	0 - 63	
158	PreCoast YCbCr 720p 60Hz		7	0 - 63	
159	PostCoast YCbCr 720p 60Hz		13	0 - 63	
160	PreCoast YCbCr 720p 50Hz		7	0 - 63	
161	PostCoast YCbCr 720p 50Hz		13	0 - 63	

Group/ Item	Item Name	Function	Initial	Range	Note
162	PreCoast YCbCr 1080i 60Hz		7	0 - 63	
163	PostCoast YCbCr 1080i 60Hz		13	0 - 63	
164	PreCoast YCbCr 1080i 50Hz		7	0 - 63	
165	PostCoast YCbCr 1080i 50Hz		13	0 - 63	
166	PreCoast YCbCr 1035i		7	0 - 63	
167	PostCoast YCbCr 1035i		13	0 - 63	
180	PreCoast SCART 480i		7	0 - 63	
181	PostCoast SCART 480i		13	0 - 63	
182	PreCoast SCART 575i		7	0 - 63	
183	PostCoast SCART 575i		13	0 - 63	
Group 10	**Sync Processor**				
0	SYNCAMPHLCKTOLOW	Minimum sync amplitude threshold for HLCK 1 to 0 tansition	0x1000	0 - 9999	
1	SYNCAMPHLCKTOHI	Minimum sync amplitude threshold for HLCK 0 to 1 tansition	0x700	0 - 9999	
Group 20	**Video Decoder**				*R : Read Only Value
0	Component Y level	Component-Scaart Input Gain Adj. Group 01: <YCbCr>1080i-60, 1080i-50, 1035i Group 02: <YCbCr>720p-60, 720p-60 Group 03: <YCbCr>480p, 575p Group 04: <YCbCr>480i, 575i Group 05: <Scard>480i, 575i *Link with G-04	118 118 118 118 134	0 - 255	* Gain adjustment [480i]
1	Component C level	Component-Scart Input Gain Adj. Group 01: <YCbCr>1080i-60, 1080i-50, 1035i Group 02: <YCbCr>720p-60, 720p-60 Group 03: <YCbCr>480p, 575p Group 04: <YCbCr>480i, 575i Group 05: <Scard>480i, 575i *Link with G-04	110 110 127 134 150	0 - 255	
2	CVBS Y Level	CVBS/Y Input Gain Adj.	162 / 163	0 - 255	Composite / S-Video * Gain adjustment [Video]
3	CVBS C Level	C Input Gain Adj.	115 / 127	0 - 255	Composite / S-Video
4	Sub Hue	CVBS/S Input NTSC Tint Adj.	32	0 - 63	
5	HS Slice level	H Sync Slice Level	4	0 - 15	
6	HS Slice Offset	Offset to H Sync Slice Level Group 01: <YCbCr>480i, 575i Group 02: <YCbCr>480p, 575p Group 03: <YCbCr>720p Group 04: <YCbCr> 1080i Group 05: Others	5 5 4 3 5	0 - 15	
7	VS Slice Level	V Sync Slice Level	6	0 - 15	
8	VS Slice Offset	Offset to VS Slice Level	6	0 - 15	
9	Sampling Phase	A/D Clock Phase	0	0 - 63	
10	Pre Shoot Level	Sub Sharpness	8	0 - 15	
11	Over Shoot Level	Sub Sharpness	8	0 - 15	
12	Y Filter	Y Filter Band Setting Group 01: Composite, S-Video Group 02: 480i, 575i, 480o, 575p Group 03: 720p-60, 720p-50, 1035i, 1080i-60, 1080i-50	5 5 6	0 - 7	
13	C Filter	C Filter Band Setting Group 01: Composite, S-Video Group 02: 480i, 575i, 480o, 575p Group 03: 720p-60, 720p-50, 1035i, 1080i-60, 1080i-50	5 5 6	0 - 7	
14	NTSC/PAL Detect	NTSC/PAL Detection Threshold Setting 0: 64H/1V - PAL Strong 1: 96H/1V 2: 128H/1V 3: 160H/1V - PAL Weak	2	0 - 3	
Group 40	**General**				
0	IP Mode	Sets for IP Off	1	0 - 1	0: IP Block not used 1: IP OFF used with IP Block
1	3:2 PullDown Mode		1	1 - 3	bit0 : Global Motion bit1 : Video Motion
2	Detect Film Mode Enable		0	0 - 2	0 : 2:3pull down & 2:2pull down 1 : 2:3pull down 2 : 2:2pull down
3	Force IP Mode		2	0 - 2	0 : IP Process Disable 1 : Force Normal IP Mode 2 : Force Film Mode Effective only for PSF Signal.
Group 41	**Deinterlacer setting** Effective only for Progressive ON-L1 mode.				
0	Motion Adaptive Weight Value	<KDEINT>	30	0 - 255	
1	Angle Interpolation Level	0 : Conservative <====> 4 : Aggressive	4	0 - 4	
2	CUE Low Pass Filter Enable	<CUELPFEN>	0	0 - 1	

Group/ Item	Item Name	Function	Initial	Range	Note
Group 42	**Deinterlacer setting** Effective only for Progressive ON-L2 mode.				
0	Motion Adaptive Weight Value	<KDEINT>	0	0 - 255	
1	Angle Interpolation Level	0 : Conservative <====> 4 : Aggressive	2	0 - 4	
2	CUE Low Pass Filter Enable	<CUELPFEN>	0	0 - 1	
Group 43	**Deinterlacer setting** Effective only for Progressive ON/Film mode.				
0	Motion Adaptive Weight Value	<KDEINT>	30	0 - 255	
1	Angle Interpolation Level	0 : Conservative <====> 4 : Aggressive	4	0 - 4	
2	CUE Low Pass Filter Enable	<CUELPFEN>	0	0 - 1	
Group 45	**Noise Reduction (Time)** Effective only for N.R: Off				
0	Noise Pixel Range	<NSRANGEY> / <NSRANGEUV>	1	0 - 2	
1	Noise Region 0	<NSREGIONY0> / <NSREGIONUV0>	12	0 - 1023	
2	Noise Region 1	<NSREGIONY1> / <NSREGIONUV1>	24	0 - 1023	
3	Noise Region 2	<NSREGIONY2> / <NSREGIONUV2>	40	0 - 1023	
4	Noise Gain Level	<NSFILTERY**> / <NSFILTERUV**>	0	0 - 255	
Group 47	**Noise Reduction (Time)** Effective only for N.R L1				
0	Noise Pixel Range	<NSRANGEY> / <NSRANGEUV>	1	0 - 2	
1	Noise Region 0	<NSREGIONY0> / <NSREGIONUV0>	12	0 - 1023	
2	Noise Region 1	<NSREGIONY1> / <NSREGIONUV1>	24	0 - 1023	
3	Noise Region 2	<NSREGIONY2> / <NSREGIONUV2>	40	0 - 1023	
4	Noise Gain Level	<NSFILTERY**> / <NSFILTERUV**>	50	0 - 255	
Group 49	**Noise Reduction (Time)** Effective only for N.R L2				
0	Noise Pixel Range	<NSRANGEY> / <NSRANGEUV>	1	0 - 2	
1	Noise Region 0	<NSREGIONY0> / <NSREGIONUV0>	12	0 - 1023	
2	Noise Region 1	<NSREGIONY1> / <NSREGIONUV1>	24	0 - 1023	
3	Noise Region 2	<NSREGIONY2> / <NSREGIONUV2>	40	0 - 1023	
4	Noise Gain Level	<NSFILTERY**> / <NSFILTERUV**>	100	0 - 255	
Group 50	**2:2pull down setting**				
0	22Film Mode Sensitivity	Film Detection Sensitivity <FILMSTVT22>	4	1 - 5	
1	22Film Mode Threshold Low	<FILMTHRD22A>	80	0 - 32767	
2	22Film Mode Threshold High	<FILMTHRD22B>	120	0 - 32767	
3	VOFTHR13	<VOFTHR13>	124	0 - 1023	* Read only
4	VOFTHR12	<VOFTHR12>	124	0 - 1023	* Read only
5	VOFTHR23	<VOFTHR23>	124	0 - 1023	* Read only
6	Video Motion Window Start X	<VOFSTARX>	10	0 - 2047	Range of detective for Film mode
7	Video Motion Window Stop X	<VOFSTOPX>	10	0 - 2047	Range of detective for Film mode
8	Video Motion Window Start Y	<VOFSTARY>	10	0 - 1023	Range of detective for Film mode
9	Video Motion Window Stop Y	<VOFSTOPY>	10	0 - 1023	Range of detective for Film mode
Group 51	**2:3pull down setting**				
0	Global Motion Sensitivity	Film Detection Sensitivity <FILMSTVT23>	4	1 - 5	
1	Video Motion Sensitivity	Film Detection Sensitivity <VOFSTVT>	4	1 - 5	
2	Video Motion Threshold Low	<VOFTHRDA>	120	0 - 32767	
3	Video Motion Threshold High	<VOFTHRDB>	180	0 - 32767	
4	Global Motion Threshold	<GMDTHRD>	124	0 - 1024	* Read only
5	23Film Mode Threshold	<FILMTHRD23>	100	0 - 32767	
6	Global Motion Window Start X	<GMDSTARX>	10	0 - 2047	Range of detective for Film mode
7	Global Motion Window Stop X	<GMDSTOPX>	10	0 - 2047	Range of detective for Film mode
8	Global Motion Window Start Y	<GMDSTARY>	10	0 - 1023	Range of detective for Film mode
9	Global Motion Window Stop Y	<GMDSTOPY>	10	0 - 1023	Range of detective for Film mode
Group 55	*** Not used**				
Group 60	**Image**				
0	Center Contrast		578/578/534/534/492/492	0 - 1023	
1	Center Brightness		512/512/512/500/512/512	0 - 1023	Video(S-Video) / Component / SCART / ANALOG / DIGITAL / HDCP
2	Center Color		512/534/512/512/512/512	0 - 1023	Setting Value=
3	Center Tint		90/90/90/90/90/90	0-180	(MENU Value - MENU Center Value) x Alpha / 10 + Center
4	Center Sharpness		16/16/16/16/16/16	Fixed 16	[Setting Value to PW]
5	Alpha Contrast		40/40/40/40/40/40	0-1000	Contrast [Max] 1023 [Min] 0
6	Alpha Brightness		140/140/140/140/140/140	0-1000	Brightness [Max] 1023 [Min] 0
7	Alpha Color		160/160/160/160/160/160	0-1000	Color [Max] 1023 [Min] 0
8	Alpha Tint		10/10/10/10/10/10	0-1000	Tint [Max] 180 [Min] 0
9	Alpha Sharpness		10/10/10/10/10/10	0-1000	Sharpness [Max] 57 [Min] 0

Group/ Item	Item Name	Function	Initial	Range	Note
Group 100	**Panel Service**				
0	G-SubGain		2048/2096/1940/1940/2048/2096/1940 /1940	0-4095	
1	R-SubGain		2048/2096/1940/2140/2048/2096/1940 /2140	0-4095	PCStandard/PCDynamic/PCReal/PCBlack-Board/AVStandard/AVDynamic/AVCinema/ AVBlackBoard
2	B-SubGain		2048/2096/1940/1940/2048/2096/1940 /1940	0-4095	
3	G-SubBright		2048/2048/2048/2112/2048/2048/2048 /2112	0-4095	
4	R-SubBright		2048/2048/2048/2112/2048/2048/2048 /2112	0-4095	PCStandard/PCDynamic/PCReal/PCBlack-Board/AVStandard/AVDynamic/AVCinema/ AVBlackBoard
5	B-SubBright		2048/2048/2048/2112/2048/2048/2048 /2112	0-4095	
6	G-GammaShift		2048/2048	0-4095	PC/AV * 50% white adjustment Center=512 R] and [B] are linked with [G]
7	R-GammaShift		2048/2048	0-4095	* While balance adjustment
8	B-GammaShift		2048/2048	0-4095	* While balance adjustment
9	G-ReferH		3584/3584	0-4095	[R] and [B] are linked with [G] Scan Direction (Front/Rear)
10	G-ReferL		848/848	0-4095	[R] and [B] are linked with [G] Scan Direction (Front/Rear)
11	R-ReferH		3584/3584	0-4095	Scan Direction (Front/Rear)
12	R-ReferL		848/848	0-4095	Scan Direction (Front/Rear)
13	B-ReferH		3584/3584	0-4095	Scan Direction (Front/Rear)
14	B-ReferL		848/848	0-4095	Scan Direction (Front/Rear)
15	DXOutR		248	0-1023	
16	DXOutG		248	0-1023	
17	DXOutB		248	0-1023	
18	H_Change_Pos		25	0-255	
19	SH_Base		1092	0-4095	
20	NRG_Pos		53	0-127	
21	NRG_Width		54	0-255	
22	OSD_Pos		2	0-3	
23	OSD_Ptn		0	0-9	
24	GammaCtrl				* Not used
25	REF_GatePos		8	0-1023	
26	REF_GateDur		197	0-1023	
27	R-BasePos		6	0-15	
28	G-BasePos		6	0-15	
29	B-BasePos		6	0-15	
30	RGB-Adjust		0	0-7	
31	RGB-AdjLv		0	0-4095	Operation STEP=512[0<->512<->1024<->1536<->2048<->2560<->3072<->3584<->4095]
32	LineR0		0	0-1023	(MIN<-->MAX Cyclic Operation)
33	LineR1		0	0-1023	(MIN<-->MAX Cyclic Operation)
34	LineR2		0	0-1023	(MIN<-->MAX Cyclic Operation)
35	LineR3		0	0-1023	(MIN<-->MAX Cyclic Operation)
36	LineR4		0	0-1023	(MIN<-->MAX Cyclic Operation)
37	LineG0		0	0-1023	(MIN<-->MAX Cyclic Operation)
38	LineG1		0	0-1023	(MIN<-->MAX Cyclic Operation)
39	LineG2		0	0-1023	(MIN<-->MAX Cyclic Operation)
40	LineG3		0	0-1023	(MIN<-->MAX Cyclic Operation)
41	LineG4		0	0-1023	(MIN<-->MAX Cyclic Operation)
42	LineB0		0	0-1023	(MIN<-->MAX Cyclic Operation)
43	LineB1		0	0-1023	(MIN<-->MAX Cyclic Operation)
44	LineB2		0	0-1023	(MIN<-->MAX Cyclic Operation)
45	LineB3		0	0-1023	(MIN<-->MAX Cyclic Operation)
46	LineB4		0	0-1023	(MIN<-->MAX Cyclic Operation)
47	GhostR-Pos		3	0-31	
48	GhostG-Pos		3	0-31	
49	GhostB-Pos		3	0-31	
50	GhostR-Cent		0	0-2047	(MIN<-->MAX Cyclic Operation)
51	GhostR-Start		128	0-255	
52	GhostR-End		128	0-255	
53	GhostG-Cent		0	0-2047	(MIN<-->MAX Cyclic Operation)
54	GhostG-Start		128	0-255	
55	GhostG-End		128	0-255	
56	GhostB-Cent		0	0-2047	(MIN<-->MAX Cyclic Operation)
57	GhostB-Start		128	0-255	
58	GhostB-End		128	0-255	
59	BlockR1		0	0-2047	(MIN<-->MAX Cyclic Operation)
60	BlockG1		0	0-2047	(MIN<-->MAX Cyclic Operation)

Group/ Item	Item Name	Function	Initial	Range	Note
61	BlockB1		0	0-2047	(MIN<-->MAX Cyclic Operation)
62	BlockR2		0	0-2047	(MIN<-->MAX Cyclic Operation)
63	BlockG2		0	0-2047	(MIN<-->MAX Cyclic Operation)
64	BlockB2		0	0-2047	(MIN<-->MAX Cyclic Operation)
65	ReverceR		0	0-2047	(MIN<-->MAX Cyclic Operation)
66	ReverceG		0	0-2047	(MIN<-->MAX Cyclic Operation)
67	ReverceB		0	0-2047	(MIN<-->MAX Cyclic Operation)
68	BackCrossR-Cent		0	0-2047	(MIN<-->MAX Cyclic Operation)
69	BackCrossR-Start		128	0-255	(MIN<-->MAX Cyclic Operation)
70	BackCrossR-End		128	0-255	
71	BackCrossG-Cent		0	0-2047	(MIN<-->MAX Cyclic Operation)
72	BackCrossG-Start		128	0-255	
73	BackCrossG-End		128	0-255	
74	BackCrossBR-Cent		0	0-2047	(MIN<-->MAX Cyclic Operation)
75	BackCrossB-Start		128	0-255	
76	BackCrossB-End		128	0-255	
77	ColshdSelect		1	0-1	
78	R-Min		370	0-1023	
79	R-Mid2		469	0-1023	
80	R-Mid1		570	0-1023	
81	R-Max		665	0-1023	
82	G-Min		370	0-1023	
83	G-Mid2		469	0-1023	
84	G-Mid1		570	0-1023	
85	G-Max		665	0-1023	
86	B-Min		370	0-1023	
87	B-Mid2		469	0-1023	
88	B-Mid1		570	0-1023	
89	B-Max		665	0-1023	
90	H-OutPos		112	0-2047	
91	OutAreaLv		0	0-1023	
92	FlickerAdj		0	0/2	not used
93	FRC_Bit		3	0-3	
94	FrontCTalkR-Cent		0	0-2047	(MIN<-->MAX Cyclic Operation)
95	FrontCTalkR-Start		128	0-255	
96	FrontCTalkR-End		128	0-255	
97	FrontCTalkG-Cent		0	0-2047	(MIN<-->MAX Cyclic Operation)
98	FrontCTalkG-Start		128	0-255	
99	FrontCTalkG-End		128	0-255	
100	FrontCTalkB-Cent		0	0-2047	(MIN<-->MAX Cyclic Operation)
101	FrontCTalkB-Start		128	0-255	
102	FrontCTalkB-End		128	0-255	
103	R-DCOffset-NGain		0/0	0-1023	Scan Direction (Front/Rear) (MIN<-->MAX Cyclic Operation)
104	R-DCOffset-N1		80/80	0-2047	(MIN<-->MAX Cyclic Operation)
105	R-DCOffset-N2		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
106	R-DCOffset-N3		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
107	R-DCOffset-N4		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
108	R-DCOffset-N5		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
109	R-DCOffset-N6		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
110	R-DCOffset-N7		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
111	R-DCOffset-N8		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
112	R-DCOffset-N9		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
113	R-DCOffset-N10		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
114	R-DCOffset-N11		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
115	R-DCOffset-N12		2000/2000	0-2047	(MIN<-->MAX Cyclic Operation)
116	G-DCOffset-NGain		0/0	0-1023	(MIN<-->MAX Cyclic Operation)
117	G-DCOffset-N1		80/80	0-2047	(MIN<-->MAX Cyclic Operation)
118	G-DCOffset-N2		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
119	G-DCOffset-N3		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
120	G-DCOffset-N4		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
121	G-DCOffset-N5		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
122	G-DCOffset-N6		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
123	G-DCOffset-N7		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
124	G-DCOffset-N8		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
125	G-DCOffset-N9		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
126	G-DCOffset-N10		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
127	G-DCOffset-N11		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
128	G-DCOffset-N12		2000/2000	0-2047	(MIN<-->MAX Cyclic Operation)
129	B-DCOffset-NGain		0/0	0-1023	(MIN<-->MAX Cyclic Operation)

Group/ Item	Item Name	Function	Initial	Range	Note
130	B-DCOffset-N1		80/80	0-2047	(MIN<-->MAX Cyclic Operation)
131	B-DCOffset-N2		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
132	B-DCOffset-N3		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
133	B-DCOffset-N4		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
134	B-DCOffset-N5		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
135	B-DCOffset-N6		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
136	B-DCOffset-N7		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
137	B-DCOffset-N8		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
138	B-DCOffset-N9		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
139	B-DCOffset-N10		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
140	B-DCOffset-N11		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
141	B-DCOffset-N12		2000/2000	0-2047	(MIN<-->MAX Cyclic Operation)
142	R-DCOffset-PGain		0/0	0-1023	(MIN<-->MAX Cyclic Operation)
143	R-DCOffset-P1		2004/2004	0-2047	(MIN<-->MAX Cyclic Operation)
144	R-DCOffset-P2		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
145	R-DCOffset-P3		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
146	R-DCOffset-P4		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
147	R-DCOffset-P5		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
148	R-DCOffset-P6		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
149	R-DCOffset-P7		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
150	R-DCOffset-P8		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
151	R-DCOffset-P9		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
152	R-DCOffset-P10		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
153	R-DCOffset-P11		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
154	R-DCOffset-P12		48/48	0-2047	(MIN<-->MAX Cyclic Operation)
155	G-DCOffset-PGain		0/0	0-1023	(MIN<-->MAX Cyclic Operation)
156	G-DCOffset-P1		2004/2004	0-2047	(MIN<-->MAX Cyclic Operation)
157	G-DCOffset-P2		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
158	G-DCOffset-P3		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
159	G-DCOffset-P4		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
160	G-DCOffset-P5		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
161	G-DCOffset-P6		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
162	G-DCOffset-P7		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
163	G-DCOffset-P8		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
164	G-DCOffset-P9		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
165	G-DCOffset-P10		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
166	G-DCOffset-P11		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
167	G-DCOffset-P12		48/48	0-2047	(MIN<-->MAX Cyclic Operation)
168	B-DCOffset-PGain		0/0	0-1023	(MIN<-->MAX Cyclic Operation)
169	B-DCOffset-P1		2004/2004	0-2047	(MIN<-->MAX Cyclic Operation)
170	B-DCOffset-P2		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
171	B-DCOffset-P3		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
172	B-DCOffset-P4		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
173	B-DCOffset-P5		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
174	B-DCOffset-P6		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
175	B-DCOffset-P7		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
176	B-DCOffset-P8		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
177	B-DCOffset-P9		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
178	B-DCOffset-P10		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
179	B-DCOffset-P11		0/0	0-2047	(MIN<-->MAX Cyclic Operation)
180	B-DCOffset-P12		48/48	0-2047	Scan Direction (Front/Rear) (MIN<-->MAX Cyclic Operation)
181	ENBX-R		0	0-127	
182	ENBX-G		0	0-127	
183	ENBX-B		0	0-127	
184	DXOutPos		0	0-1	
185	R_V_INPUT_STEP_0		36	0-1023	(MIN<-->MAX Cyclic Operation)
186	R_V_INPUT_STEP_512		28	0-1023	(MIN<-->MAX Cyclic Operation)
187	R_V_INPUT_STEP_1024		24	0-1023	(MIN<-->MAX Cyclic Operation)
188	R_V_INPUT_STEP_1536		16	0-1023	(MIN<-->MAX Cyclic Operation)
189	R_V_INPUT_STEP_2048		8	0-1023	(MIN<-->MAX Cyclic Operation)
190	R_V_INPUT_STEP_2560		0	0-1023	(MIN<-->MAX Cyclic Operation)
191	R_V_INPUT_STEP_3072		1019	0-1023	(MIN<-->MAX Cyclic Operation)
192	R_V_INPUT_STEP_3584		0	0-1023	(MIN<-->MAX Cyclic Operation)
193	R_V_INPUT_STEP_4096		0	0-1023	(MIN<-->MAX Cyclic Operation)
194	G_V_INPUT_STEP_0		36	0-1023	(MIN<-->MAX Cyclic Operation)
195	G_V_INPUT_STEP_512		28	0-1023	(MIN<-->MAX Cyclic Operation)
196	G_V_INPUT_STEP_1024		24	0-1023	(MIN<-->MAX Cyclic Operation)
197	G_V_INPUT_STEP_1536		16	0-1023	(MIN<-->MAX Cyclic Operation)

Group/ Item	Item Name	Function	Initial	Range	Note
198	G_V_INPUT_STEP_2048		8	0-1023	(MIN<-->MAX Cyclic Operation)
199	G_V_INPUT_STEP_2560		0	0-1023	(MIN<-->MAX Cyclic Operation)
200	G_V_INPUT_STEP_3072		1019	0-1023	(MIN<-->MAX Cyclic Operation)
201	G_V_INPUT_STEP_3584		0	0-1023	(MIN<-->MAX Cyclic Operation)
202	G_V_INPUT_STEP_4096		0	0-1023	(MIN<-->MAX Cyclic Operation)
203	B_V_INPUT_STEP_0		36	0-1023	(MIN<-->MAX Cyclic Operation)
204	B_V_INPUT_STEP_512		28	0-1023	(MIN<-->MAX Cyclic Operation)
205	B_V_INPUT_STEP_1024		24	0-1023	(MIN<-->MAX Cyclic Operation)
206	B_V_INPUT_STEP_1536		16	0-1023	(MIN<-->MAX Cyclic Operation)
207	B_V_INPUT_STEP_2048		8	0-1023	(MIN<-->MAX Cyclic Operation)
208	B_V_INPUT_STEP_2560		0	0-1023	(MIN<-->MAX Cyclic Operation)
209	B_V_INPUT_STEP_3072		1019	0-1023	(MIN<-->MAX Cyclic Operation)
210	B_V_INPUT_STEP_3584		0	0-1023	(MIN<-->MAX Cyclic Operation)
211	B_V_INPUT_STEP_4096		0	0-1023	(MIN<-->MAX Cyclic Operation)
212	FRPPOL		84	0-4095	
213	FRP_POS		18	0-255	
214	SWAP		1285	0-2047	
215	PRE_COLSHD_SEL		0	0-255	
216	HSYNC_FOLLOW		1	0-1	
217	DELAY_HSYNC		30	0-2047	
218	DELAY_VSYNC		16	0-255	
219	VSYNC_FOLLOW		0	0-1	
220	BLANK_RCENTER		0	0-2047	(MIN<-->MAX Cyclic Operation)
221	BLANK_RSTART		128	0-255	
222	BLANK_REND		128	0-255	
223	BLANK_GCENTER		0	0-2047	(MIN<-->MAX Cyclic Operation)
224	BLANK_GSTART		128	0-255	
225	BLANK_GEND		128	0-255	
226	BLANK_BCENTER		0	0-2047	(MIN<-->MAX Cyclic Operation)
227	BLANK_BSTART		128	0-255	
228	BLANK_BEND		128	0-255	
229	DATA LIMIT_MAX_R		4095	0-4095	
230	DATA LIMIT_MAX_G		4095	0-4095	
231	DATA LIMIT_MAX_B		4095	0-4095	
Group 101	**Panel Service(6150/1060)**				
0	R-LCCOM		340	0-511	* R-Common center adjustment
1	G-LCCOM		340	0-511	* G-Common center adjustment
2	B-LCCOM		340	0-511	* B-Common center adjustment
3	R-LCCOM-Gain		193	0-255	
4	G-LCCOM-Gain		193	0-255	
5	B-LCCOM-Gain		193	0-255	
6	R-LCCOM-Bright		0	0-255	
7	G-LCCOM-Bright		0	0-255	
8	B-LCCOM-Bright		0	0-255	
9	R-LCCOM-Cent		18	0-63	
10	G-LCCOM-Cent		18	0-63	
11	B-LCCOM-Cent		18	0-63	
12	R-ENBX-PW		10	0-127	
13	G-ENBX-PW		10	0-127	
14	B-ENBX-PW		10	0-127	
15	R-DXIN		22	0-255	Link with No.18
16	G-DXIN		22	0-255	Link with No.19
17	B-DXIN		22	0-255	Link with No.20
18	R-CLXIN		22	0-255	Link with No.15
19	G-CLXIN		22	0-255	Link with No.16
20	B-CLXIN		12	0-255	Link with No.17
21	R-ENBX1IN		17	0-255	
22	G-ENBX1IN		17	0-255	
23	B-ENBX1IN		17	0-255	
Group 110	*** Not used**				
Group 200	**Option**				
0	Logo Prohibition (Forced No Brand)	Logo Prohibition (0: Menu, 1: Forced, 2: China, 3-9: not used)	0	0 - 2	Effective after AC On
1	RS232C Baudrate	Baud Rate	0	0 - 2	0: 19200bps, 1: 9600bps, 2: 115200bps
2	PJLink Enable				* Not used

Electrical Adjustment

Group/ Item	Item Name	Function	Initial	Range	Note
3	Shipping Setting		0	0 - 20	Default set when the value is set to 10.
4	CABLE SW	Long Cable			* Not used
5	PW Debug Command Enable		0	0 - 1	0:Disable (Serial Command Eanble) 1: Enable (PW Debug Mode)
6	Device Refresh Disable		0	0 - 1	0:Enable, 1:Disable No last memory
7	Device Access Disable		0	0 - 1	0:Enable (Normal), 1:Disable No last memory
8	PJ-Net HangUp Check		0	0 - 1	0: Enable, 1: Disable
9					* Not used
10					* Not used
11					* Not used
12					* Not used
13					* Not used
14					* Not used
15					* Not used
20	Projector Time Reset		0	0 - 20	Projector Time is cleared when the value is set to 10.
21	Lamp Warning Time (NORMAL)	Lamp Life at Normal Mode (Warning Time at Normal)		500 - 8000	
22	Lamp Warning Time (ECO)	Lamp Life at Eco Mode (Warning Time at Eco)		500 - 8000	
23	Lamp Warning Time (HIGH)	Lamp Life at Eco Mode (Warning Time at High)		500 - 8000	
30	Lamp life test enable				0:Disable 1:Enable, for safety test only
31	Lmap On time(for life test)	For test purpose			
32	Lamp Off time(for life test)	For test purpose			
33	Lamp total time(for life test)	For test purpose			
50	Lamp Replacement Display	Lamp Warning Display On/Off	1	0 - 1	0: Off, 1: On
51	Filter Warning Display	Filter Warning Display On/Off	1	0 - 1	0: Off, 1: On
52	Lamp counter Reset Times	Reset Times of Lamp Counter	0	0 - 255	* Read only
53	Filter Counter Reset times	Reset Times of Filter Counter	0	0 - 255	* Read only
54	Factory Default Execute Times	Reset Times of Factory Default Set	0	0 - 255	* Read only
55	Motor Stop	Motor Stop 0: Enable, 1: Disable	0	0 - 1	
56	Mouse Posiyion (X)	Offset Value of X axis	0	0 - 1024	
57	Mouse Position (Y)	Offset Value of Y axis	0	0 - 1024	
58	Lamp Go Out	Lamp go out	0	0 - 1	
80	Panel life test mode	Panel life test mode 0: Life test mode, 1: Normal	0	0 - 1	
Group 201	**Option (signal)**				
0	FrameLock Option		1	0 - 1	0: FrameLockOFF at PC signal 1: FrameLockON at PC signal and 47Hz (Vfreq) ~ Panel frequency of input signal
1					* Not used
2	Field Sense Invert Enable		0	0 - 1	Reverse Processing of FLDINVSetting Value 0: Disable - Used FLDINV Setting Value 1: Enable - Used Reversed FLDINV Setting Value
3					* Not used
4	Sub Image Enable		1	0 - 1	0:Disable (Service Adjustment Dsiable, Used all the Center Values 1:Enable (Service Adjustment Enable)
5					* Not used
6	Zoom Accelerator Enable		0	0 - 1	0:Zoom Accelerator OFF, 1:Zoom Accelerator ON No last memory
7	DZoom Reset by Keystone		0	0 - 1	0:Enable (Normal), 1:Disable (Dzoo is not cancelled even if Keystone is cancelled) No last memory
8	Stability Count	Count Value of V-missing	5	0 - 255	
9	Sensivity for Signal Lost (HSYNC)	Only used this value for No Signal Judgement(Hz)	350	0 - 32767	
10	Sensivity for Signal Lost (VSYNC)	Only used this value for No Signal Judgement(Line)	3	0 - 255	
11	Keystone Filter center value	Center value of Keystone Filter	16	0 - 30	
12					* Not used
13					* Not used
14					* Not used
15					* Not used
Group 205	**Spread Spectrum**				
0	Spread Spectrum Enable	0: Spectrum-on, 1: Spectrum-off	1	0 - 1	